

# PARKER AND PINE PARKER WATER AND SANITATION DISTRICT UTILITY PLANS

PARKER AND PINE FILING 1  
A PART OF THE SOUTHEAST QUARTER OF SECTION 9 AND A PART OF THE  
NORTHEAST QUARTER OF SECTION 16 TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE  
6TH P.M. TOWN OF PARKER, COUNTY OF DOUGLAS, STATE OF COLORADO

### CONTACTS:

#### DEVELOPER:

EVT PARKER COLORADO, LLC.  
2710 E. CAMELBACK ROAD, SUITE 210  
PHOENIX, AZ 85016  
TEL: (602) 468-6100  
CONTACT: RYAN AMATO

#### ENGINEER:

KIMLEY-HORN AND ASSOCIATES, INC.  
4582 SOUTH ULSTER STREET, SUITE 1500  
DENVER, CO 80237  
TEL: (303) 228-2318  
CONTACT: DAN SKEEHAN

#### LANDSCAPE ARCHITECT:

KIMLEY-HORN AND ASSOCIATES, INC.  
4582 SOUTH ULSTER STREET, SUITE 1500  
DENVER, CO 80237  
TEL: (303) 228-2319  
CONTACT: CHRIS HEPLER

#### TELEPHONE:

CENTURYLINK  
1801 CALIFORNIA STREET, SUITE 240  
DENVER, CO 80202  
CONTACT: IZZY MILLER  
EMAIL: IZZY.MILLER@CENTURYLINK.COM

#### GAS SERVICE:

XCEL ENERGY  
1800 LARIMER STREET  
DENVER, CO 80202  
CONTACT: RON JOHNSON  
EMAIL: RON.H.JOHNSON@XCELENERGY.COM

#### TOWN OF PARKER:

TOWN OF PARKER  
20120 EAST MAIN STREET  
PARKER, CO 80138-7334  
(303) 805-3331  
CONTACT: CAROLYN PARKINSON

#### ELECTRICAL SERVICE:

IREA  
5496 US HWY 85  
SEDALIA, CO 80135  
TEL: (303) 688-7431  
CONTACT: AMANDA STEINER

#### ARCHITECT:

NAOS DESIGN GROUP, LLC  
4949 SOUTH SYRACUSE ST. SUITE 460  
DENVER, CO 80237  
TEL: 303-759-5777  
CONTACT: JORDAN BONICELLI

#### SURVEYOR:

ENGINEERING SERVICE COMPANY  
1300 SOUTH POTOMAC ST. SUITE 126  
AURORA, CO 80012  
TEL: 303-337-1393  
CONTACT: CHARLES BECKSTROM, PLS

#### TELEVISION:

COMCAST  
1601 MILE HIGH STADIUM CIRCLE  
DENVER, CO 80204  
CONTACT: DEAN FLENTHROPE  
EMAIL: DEAN\_FLENTHROPE@CABLE.COMCAST.COM

#### WATER/SANITARY SEWER:

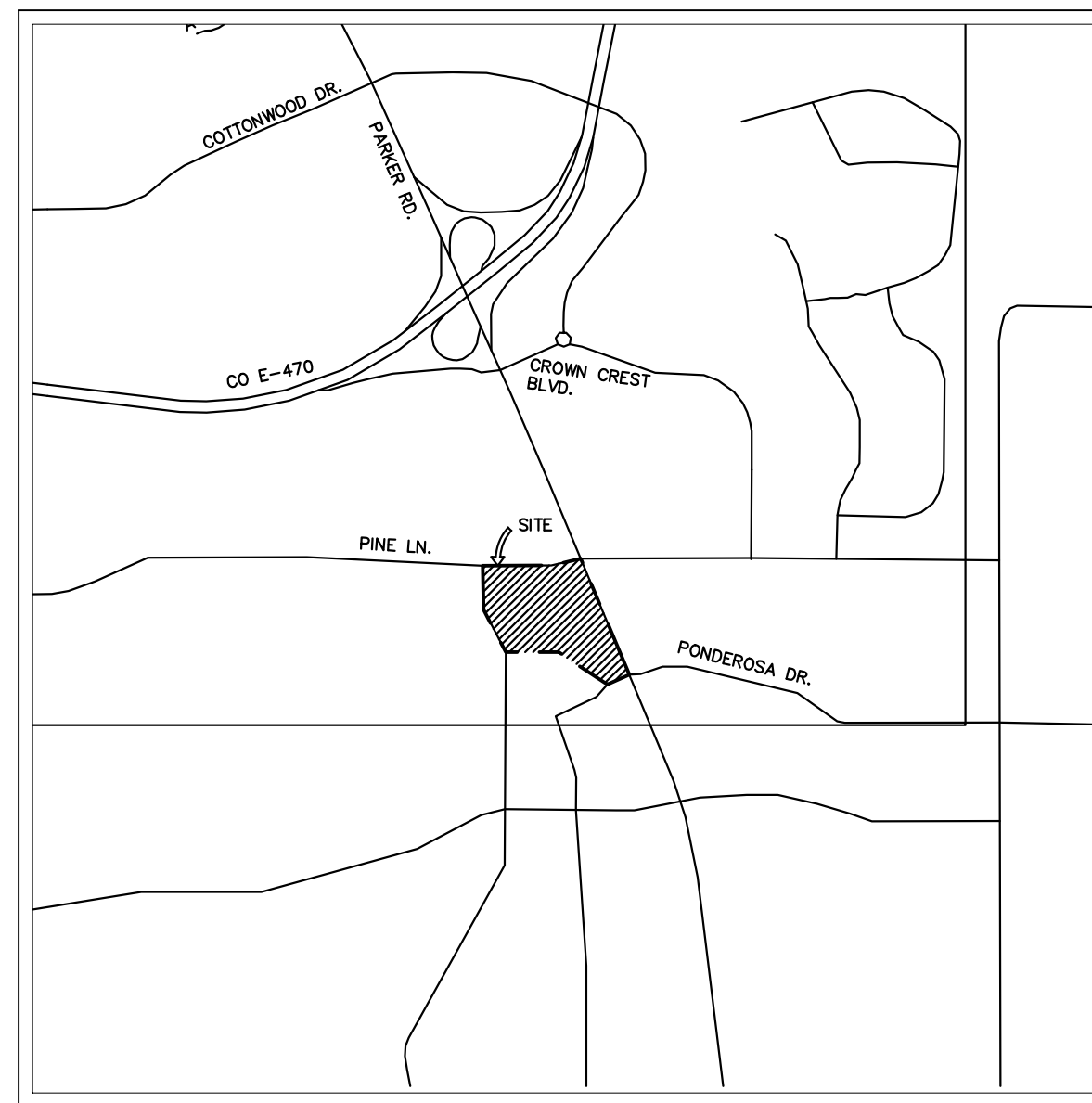
PARKER WATER AND SANITATION DISTRICT  
18100 E. WOODMAN ROAD  
PARKER, CO 80134  
TEL: 303-841-4627  
CONTACT: DRAYTON SANDERSON

#### FIRE DEPARTMENT:

SOUTH METRO FIRE RESCUE AUTHORITY  
9195 E. MINERAL AVE.  
CENTENNIAL, CO 80112  
TEL: (720) 989-2244  
CONTACT: CHIP KERKHOVE

#### TOWN OF PARKER PLAN REVIEW:

TOWN OF PARKER PLAN REVIEW  
20120 E. MAIN STREET  
PARKER, CO 80138  
TEL: (303) 805-3169  
CONTACT: RANDY CAPRA



VICINITY MAP  
1"=2,000'

PARKER WATER AND SANITATION DISTRICT CONSTRUCTION PLANS	
SHEET NUMBER	SHEET TITLE
C7.0	COVER SHEET
C7.1	WATER AND SANITARY SEWER NOTES
C7.2	OVERALL UTILITY PLAN
C7.3	SANITARY SEWER PLAN AND PROFILE
C7.4	SANITARY SEWER PLAN AND PROFILE
C7.5	WATER PLAN AND PROFILE - A
C7.6	WATER PLAN AND PROFILE - B
C7.7	WATER PLAN AND PROFILE - C
C7.8	WATER PLAN AND PROFILE - D
C7.9	UTILITY DETAILS
C7.10	UTILITY DETAILS
C7.11	UTILITY DETAILS
C7.12	UTILITY DETAILS
C7.13	UTILITY DETAILS

### LEGAL DESCRIPTION

PARKER AND PINE FILING 1 COUNTY OF DOUGLAS, STATE OF COLORADO.

### BENCHMARK

DOUGLAS CONTROL MONUMENT #1.095035, A 3 1/4" ALUMINUM CAP.

ELEVATION = 5906.34 FEET (NAVD 1988), AS PUBLISHED BY DOUGLAS COUNTY.

### BASIS OF BEARINGS

BEARINGS SHOWN HEREON ARE BASED UPON THE WEST LINE OF THE SW 1/4 OF SECTION 10, TOWNSHIP 6 SOUTH, RANGE 66 WEST, OF THE 6TH PRINCIPAL MERIDIAN BEARING S00°17'51"W AS REFERENCED ON THE PLAT OF PARKER AUTO PLAZA FILING NO.1 AND BOUND BY THE MONUMENTS SHOWN HEREON.

### FLOODPLAIN NOTE

BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THIS PROPERTY LIES IN ZONE X OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 08035C0067G AND DATED MARCH 16, 2016 - SUBJECT PROPERTY IS NOT IN A SPECIAL FLOOD HAZARD AREA.

### MATERIALS LIST:

DESCRIPTION	QTY.	UNIT
6" PVC WATER	338	LF
8" PVC WATER	3055	LF
6" GATE VALVE	12	EA
8" GATE VALVE	17	EA
8" LOW-POINT BLOW-OFF VALVE	18	EA
1.5" TAP	1	EA
1.5" METER	1	EA
1.5" TYPE K COPPER WATER	41	LF
20"x8" TAPPING SLEEVE	2	EA
8"x8"x6" TEE	13	EA
8"x8"x6" SWIVEL TEE	1	EA
8"x8"x8" TEE	15	EA
11.25" BEND	2	EA
22.5" BEND	1	EA
45" BEND	2	EA
90" BEND	4	EA
8"x8" CROSS	1	EA
8"x6" REDUCER	2	EA
AIR VAC RELEASE VALVE	1	EA
8" PVC SANITARY SEWER	1037	LF
6" PVC SANITARY LATERAL	270	LF
SANITARY SEWER MANHOLE	6	EA
SANITARY SEWER CLEANOUT	12	EA
FIRE HYDRANT	7	EA
VERTICAL SHOE HYDRANT	1	EA

\*QUANTITIES ARE FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ALL QUANTITIES PRIOR TO CONSTRUCTION

ALL FIRE HYDRANTS SHALL BE INSTALLED ACCORDING TO WATER UTILITY STANDARDS. THE NUMBER AND LOCATIONS OF THE FIRE HYDRANTS AS SHOWN ON THE OVERALL UTILITY PLAN ARE CORRECT AS SPECIFIED BY THE TOWN OF PARKER, COMMUNITY DEVELOPMENT DEPARTMENT.

*Drayton Sanderson* 10/09/2020  
FIRE CODE OFFICIAL OR DESIGNATED REPRESENTATIVE DATE

(NOTE - UNDERGROUND FIRE LINE (UFL) SUBMITTAL DOCUMENTS MUST MEET THE REQUIREMENT OF NFPA 24 WHEN SUBMITTING FOR REVIEW.)

THE DISTRICT INSPECTOR MUST BE NOTIFIED AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION. CALL PARKER WATER AND SANITATION DISTRICT AT 303-841-4627. THE DISTRICT WILL PROVIDE PERIODIC INSPECTIONS OF THE WORK. 24 HOUR NOTICE TO THE INSPECTOR IS REQUIRED FOR SCHEDULING INSPECTIONS. ANY WORK ACCOMPLISHED WITHOUT THE APPROVAL OF THE INSPECTOR WILL BE SUBJECT TO REJECTION.

REVIEWED FOR CONFORMANCE TO PARKER WATER AND SANITATION DISTRICT STANDARDS.  
*Drayton Sanderson*  
BY: (DISTRICT REPRESENTATIVE)  
DATE: 10/08/2020

APPROVED FOR CONSTRUCTION:  
PARKER WATER AND SANITATION DISTRICT  
*Robert Reynolds*  
BY: (DISTRICT ENGINEER)  
DATE: 10/08/2020

### DISTRICT ACCEPTANCE NOTE

- UPON COMPLETION OF SANITARY AND WATER CONSTRUCTION AND TESTING, THE DEVELOPER OR CONTRACTOR SHALL CONTACT THE DISTRICT FOR PROBATIONARY ACCEPTANCE INSPECTION. A PUNCHLIST WILL BE PROVIDED FOR THE DEVELOPER AND CONTRACTOR UPON COMPLETION OF THE INITIAL WALK-THRU AND PROBATIONARY ACCEPTANCE WILL BE ISSUED FOLLOWING COMPLETION AND ACCEPTANCE OF THE WORK OUTLINED IN THE PUNCHLIST.
- THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE PROPER FUNCTIONING OF THE LINES FOR UP TO TWO (2) YEARS FROM THE DATE OF PROBATIONARY ACCEPTANCE OF THE LINES BY THE DISTRICT. ANY MALFUNCTION DURING THIS PERIOD OF GUARANTEE SHALL BE REMEDIED BY THE CONTRACTOR TO THE SATISFACTION OF THE DISTRICT ENGINEER AT NO EXPENSE TO THE DISTRICT.
- THE DATE OF FINAL ACCEPTANCE WILL BE INDICATED IN THE CONDITION OF THE PROBATIONARY ACCEPTANCE LETTER. THE DEVELOPER SHALL BE RESPONSIBLE FOR CONTACTING THE DISTRICT FOR FINAL INSPECTION AND FINAL ACCEPTANCE.

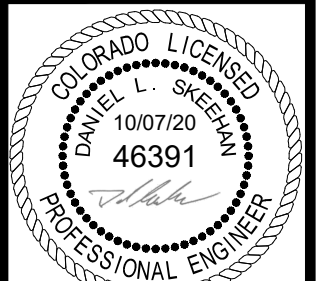


NO.	REVISION	BY	DATE

**Kimley»Horn**  
2020 KIMLEY-HORN AND ASSOCIATES, INC.  
4582 South Ulster Street, Suite 1500  
Denver, Colorado 80237 (303) 228-2300

DESIGNED BY: DLS  
DRAWN BY: JRK  
CHECKED BY: DLS  
DATE: 10/07/20

PARKER AND PINE FILING 1  
PARKER, CO  
CONSTRUCTION DOCUMENTS  
COVER SHEET



PROJECT NO.  
096502001

DRAWING NAME  
096502001CV\_1UT

C7.0

C:\Users\jacob.kimley\OneDrive\Documents\Projects\2020\096502001CV\_1UT.dwg Kimley-Horn Job: 10/16/2020 10:57 AM  
THIS DOCUMENT IS UNLESS OTHERWISE SPECIFIED, THE PROPERTY OF KIMLEY-HORN AND ASSOCIATES, INC. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF KIMLEY-HORN AND ASSOCIATES, INC. ALL RIGHTS RESERVED.

**PARKER WATER AND SANITATION GENERAL NOTES**

- ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE PWSO ENGINEERING STANDARDS AND SPECIFICATIONS, LATEST VERSION.
- THE CONTRACTOR SHALL CONTACT ALL APPROPRIATE UTILITY COMPANIES AND THE TOWN OF PARKER, DOUGLAS COUNTY AND OTHER NEIGHBORING CITIES AND TOWNS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ANY EXISTING UTILITY (INCLUDING DEPTHS) WHICH MAY CONFLICT WITH THE PROPOSED CONSTRUCTION. ALL EXISTING UTILITIES SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR. DAMAGED UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.
- ALL ITEMS SHOWN ON THE PLANS AS EXISTING ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE ACTUAL LOCATIONS MAY VARY FROM THE PLANS, ESPECIALLY IN THE CASE OF UNDERGROUND UTILITIES. WHENEVER THE CONTRACTOR DISCOVERS A DISCREPANCY IN LOCATIONS CONTACT THE PWSO IMMEDIATELY.
- PWSO ENGINEER AND OTHER APPROVING AGENCIES ARE TO BE NOTIFIED 48 HOURS PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL OBTAIN, AT HIS EXPENSE, ALL PERMITS NECESSARY TO PERFORM THE PROPOSED WORK.
- ALL CONCRETE SHALL BE A MINIMUM OF CLASS A, 6 SACK, TYPE II, 3000-POUND COMPRESSION STRENGTH.
- THE DESIGN ENGINEER SHALL SUBMIT ONE (1) SET OF "AS-BUILT" DRAWINGS AND ELECTRONIC FILES TO THE DISTRICT ENGINEER FOR APPROVAL BY DISTRICT. AFTER APPROVAL HAS BEEN GRANTED BY THE DISTRICT ENGINEER, FULL SIZE PRINTS SHALL BE TRANSMITTED TO THE PWSO OFFICE.
- NO WORK SHALL BE BACKFILLED UNTIL THE CONSTRUCTION HAS BEEN INSPECTED AND APPROVED FOR BACKFILLING BY THE DISTRICT ENGINEER OR REPRESENTATIVE OF THE DISTRICT ENGINEER. ALL BACKFILL MATERIAL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY. COMPACTION TESTS MUST BE SUBMITTED TO DISTRICT ENGINEER PRIOR TO PROBATIONARY ACCEPTANCE.
- TRENCHES SHALL BE EXCAVATED AND THE PIPE EXPOSED FOR THE INSPECTION AT ANY LOCATION ON THE PROJECT IF SO ORDERED BY THE INSPECTOR.
- THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE PROPER FUNCTIONING OF LINES (WATER AND DEPTHS) FOR UP TO TWO (2) YEARS FROM THE DATE OF PROBATIONARY ACCEPTANCE OF THE LINES BY THE DISTRICT. ANY MALFUNCTION DURING THIS PERIOD OF GUARANTEE SHALL BE REMEDIED BY THE CONTRACTOR TO THE SATISFACTION OF THE DISTRICT ENGINEER AT NO EXPENSE TO THE DISTRICT.
- SURFACE GRADES ARE TO BE WITHIN PLUS OR MINUS ONE FOOT OF FINISHED GRADE AND VERIFICATION OF COMPACTION RESULTS OBTAINED PRIOR TO THE INSTALLATION OF WATER AND SEWER LINES. RESULTS MUST BE SUBMITTED TO THE DISTRICT ENGINEER.
- ALL SERVICES WILL BE PERMANENTLY MARKED ON CURB FACE AS FOLLOWS:  
 "X" FOR SANITARY SERVICE SEWERS  
 "V" FOR WATER SERVICES
- NO TREES ALLOWED IN EASEMENTS OR WITHIN 8' OF WATER OR SANITARY SEWER MAINS IN RIGHT OF WAY.
- THE CONTRACTOR SHALL HAVE IN HIS POSSESSION AT ALL TIMES ONE (1) SIGNED COPY OF THE PLANS WHICH HAVE BEEN APPROVED BY THE PWSO AND THE DISTRICT ENGINEER AND ONE (1) COPY OF THE LATEST PWSO SPECIFICATION MANUAL.

**ADDITIONAL NOTES**

- ALL SANITARY SEWER AND STORM SEWER IMPROVEMENTS SHOWN HEREON SHALL BE PRIVATE. ALL WATER MAIN IMPROVEMENTS SHALL BE PUBLIC. REFER TO SPECIFIC PLAN SHEETS FOR MATERIALS AND ADDITIONAL DETAILS.
- TOWN OF PARKER REQUIRES 25' STORM SEWER EASEMENT.
- PARKER WATER AND SANITATION DISTRICT REQUIRES 30' EXCLUSIVE EASEMENT OR 50' NON-EXCLUSIVE EASEMENT.

**SANITARY SEWER NOTES**

- ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE PWSO ENGINEERING STANDARDS AND SPECIFICATIONS, LATEST VERSION.
- ALL SEWER MAINS SHALL BE PVC, ASTM D-3034, SDR 35 OR APPROVED EQUAL. ALL SEWER MAIN SIZE IS 8" IN DIAMETER UNLESS OTHERWISE NOTED.
- SEWER LINES SHALL BE INSTALLED 5.0 FEET SOUTH OR WEST OF STREET CENTERLINE, UNLESS OTHERWISE SHOWN ON PLANS. SEWER LINES SHALL BE 10.00 FEET FROM WATER LINES EXCEPT WHEN CROSSING EACH OTHER. SEWER LINES WHICH CROSS LESS THAN 1.50 FEET VERTICALLY FROM THE WATER MAIN SHALL BE ENCASED IN CONCRETE AS PER PWSO SPECIFICATIONS. USE RUBBER GASKETS FOR PVC ENCASMENT.
- SEWER RIM ELEVATIONS SHOWN ARE APPROPRIATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATIONS. RING AND COVER SHALL BE SET IN CENTERED CONCRETE RINGS WITH RAM-NECK FOR ADJUSTMENT TO MATCH FINAL PAVEMENT ELEVATIONS.
- THE CONTRACTOR AND SURVEY CREW SHALL VERIFY ELEVATIONS OF EXISTING SEWER LINES AND MANHOLES TO BE TIED TO PRIOR TO CONSTRUCTION OR STAKING OF SANITARY SEWER.
- NO UNDERDRAIN SYSTEM WILL BE ALLOWED TO BE PLACED IN MAINLINE OR SEWER SERVICE TRENCHES.
- SEWER SERVICE TEES FOR EACH UNIT SHALL BE STAKED BY A SURVEY CREW AND FURNISHED AND INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL FURNISH TO THE ENGINEER "AS CONSTRUCTED" LOCATION OF TEES. SEWER WYES SHALL BE USED RATHER THAN TEES.
- ALL MANHOLES SHALL BE 48-INCHES IN DIAMETER WITH 24-INCH RING AND COVER, ECCENTRIC CONE UNLESS OTHERWISE SPECIFIED. ALL MANHOLES SHALL HAVE SHAPED INVERTS.
- PIPE BEDDING SHALL BE CLASS "B" AND SHALL CONFORM TO ASTM C-33 OR D-448 GRADATION NO. 6 OR NO. 67.
- AT LEAST FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION, A PRE-CONSTRUCTION MEETING WILL BE HELD AT THE OFFICE OF THE DISTRICT ENGINEER AND ATTENDED BY THE CONTRACTOR AND REPRESENTATIVES OF THE OTHER APPROVING AGENCIES. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE DISTRICT ENGINEER TO SCHEDULE THIS MEETING.
- THE CONTRACTOR SHALL HAVE IN HIS POSSESSION AT ALL TIMES ONE (1) SIGNED COPY OF THE PLANS WHICH HAVE BEEN APPROVED BY THE PWSO AND THE DISTRICT ENGINEER AND ONE (1) COPY OF THE LATEST PWSO SPECIFICATION MANUAL.
- ALL SEWER LINES SHALL BE TESTED IN ACCORDANCE WITH THE PWSO STANDARDS AND SPECIFICATIONS PRIOR TO ACCEPTANCE OR ANY CONNECTION TO AN EXISTING SEWER LINE.
- PRIOR TO STARTING WORK WHERE SEWER MAIN IS TO BE CONNECTED TO EXISTING PWSO SEWER SYSTEMS, THE NEAREST MANHOLE TO THE POINT OF TIE-IN SHALL BE PLUGGED WITH A PLUMBER'S PLUG ON THE INLET SIDE BY THE CONTRACTOR. THIS PLUG SHALL REMAIN IN PLACE UNTIL FINAL PROBATIONARY ACCEPTANCE BY PWSO. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PUMPING AND CLEANING THESE MANHOLES AND REMOVING THE PLUG WHEN INSTRUCTED BY THE DISTRICT.
- PRIOR TO PROBATIONARY ACCEPTANCE WALK-THROUGH, THE CONTRACTOR SHALL JET CLEAN THE ENTIRE SANITARY SEWER SYSTEM AND PUMP OUT AT THE PLUGGED MANHOLE.

**WATER MAIN NOTES**

- ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE PWSO ENGINEERING STANDARDS AND SPECIFICATIONS, LATEST REVISION.
- ALL WATER MAINS SHALL BE PER PWSO MATERIALS SPECIFICATIONS. ALL MATERIALS IN CONTACT WITH POTABLE WATER SHALL BE SUITABLE FOR CHLORINATED AND CHLORAMINATED WATER.
- ALL BENDS, PLUGS, REDUCERS, AND FIRE HYDRANTS TO BE RODDED OR MEGA-LUGGED. ALL FITTINGS SHALL BE WRAPPED PER PWSO MATERIALS SPECIFICATIONS.
- THERE SHALL BE A MINIMUM COVER OF 4.5 FEET OVER ALL WATER MAINS.
- FIRE HYDRANTS SHALL CONFORM TO AWWA C-502 "DRY BARREL FIRE HYDRANTS" PIPE HYDRANT ASSEMBLIES PER PWSO SPECIFICATIONS.
- ALL BENDS, TEES, FIRE HYDRANTS, BLOW-OFFS, AND PLUGS AT DEAD-END MAINS SHALL BE PROTECTED FROM THRUST WITH CONCRETE THRUST BLOCKS.
- PRECAUTIONS SHALL BE TAKEN TO PROTECT THE INTERIOR OF PIPES, FITTINGS, AND VALVES AGAINST CONTAMINATION. ALL OPENINGS IN THE PIPELINE SHALL BE CLOSED WITH WATERTIGHT PLUGS WHEN PIPE LAYING IS STOPPED AT THE CLOSE OF THE DAY'S WORK OR FOR OTHER REASONS, SUCH AS REST BREAKS OR MEAL PERIODS.
- VALVES IN STREETS ARE TO BE LOCATED AT PROPERTY LINE EXTENSIONS EXCEPT FOR TAPPING TEES; WHERE AN ADDITIONAL VALVE SHALL BE PLACED ON THE TAPPING TEE. OTHER LOCATIONS SHOWN ON THE PLANS.
- WHEN NECESSARY TO LOWER OR RAISE WATER LINES AT STORM DRAINS AND OTHER UTILITY CROSSING, A MINIMUM CLEARANCE OF 1.5 FEET SHALL BE MAINTAINED BETWEEN OUTSIDE OF PIPES.
- THE CONTRACTOR SHALL NOTIFY THE PWSO AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION. IF WORK IS SUSPENDED FOR ANY PERIOD OF TIME AFTER INITIAL START-UP, THE CONTRACTOR MUST NOTIFY THE DISTRICT ENGINEER 48 HOURS PRIOR TO RE-START.
- PIPE BEDDING SHALL BE A CLEAN, WELL-GRADED SAND OR SQUEEGEE SAND IN ACCORDANCE WITH PWSO STANDARDS AND SPECIFICATIONS, LATEST REVISION.
- THE CONTRACTOR SHALL NOTIFY THE PUBLIC UTILITY COMPANIES AND DETERMINE THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO PROCEEDING WITH THE EXCAVATION. ALL WORK PERFORMED IN THE AREA OF THE PUBLIC UTILITIES SHALL BE PERFORMED ACCORDING TO THE REQUIREMENTS OF THESE AGENCIES.
- COMPACTION OF ALL TRENCHES MUST BE ATTAINED IN ACCORDANCE WITH THE SOILS REPORTS AND COMPACTION TEST RESULTS SUBMITTED TO THE DISTRICT ENGINEER PRIOR TO PROBATIONARY ACCEPTANCE.
- AT LEAST FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION, A PRE-CONSTRUCTION MEETING WILL BE HELD AT THE OFFICE OF THE DISTRICT ENGINEER AND ATTENDED BY THE CONTRACTOR, DESIGN ENGINEER, AND REPRESENTATIVE OF OTHER APPROVING AGENCIES.
- CHLORINATION AND FLUSHING: ALL WATER MAINS SHALL BE INSTALLED AND CHLORINATED PER PWSO SPECIFICATIONS. CHLORINATION OF FINISHED PIPELINE COMPLETED BEFORE HYDROSTATIC TESTING.
- HYDROSTATIC TESTING: ALL WATER MAINS SHALL BE TESTED PER THE REQUIREMENTS OF THE PWSO SPECIFICATIONS UP TO MINIMUM OF 150 PSI IN THE PRESENCE OF A PWSO INSPECTOR/ENGINEER.

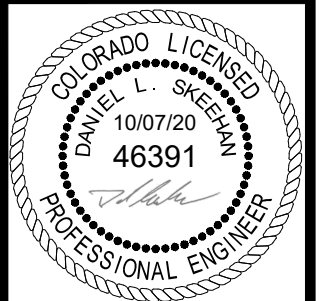
**APPROVED**  
 Oct 08 2020  
**PARKER WATER AND  
 SANITATION DISTRICT**

NO.	REVISION	BY	DATE

**Kimley»Horn**  
 2020 KIMLEY-HORN AND ASSOCIATES, INC.  
 4582 South Ulster Street, Suite 1500  
 Denver, Colorado 80237 (303) 228-2300

DESIGNED BY: DLS  
 DRAWN BY: JRK  
 CHECKED BY: DLS  
 DATE: 10/07/20

PARKER AND PINE FILING 1  
 PARKER, CO  
 CONSTRUCTION DOCUMENTS  
**WATER AND SANITARY SEWER NOTES**



PROJECT NO.  
096502001

DRAWING NAME  
096502001CV\_UT

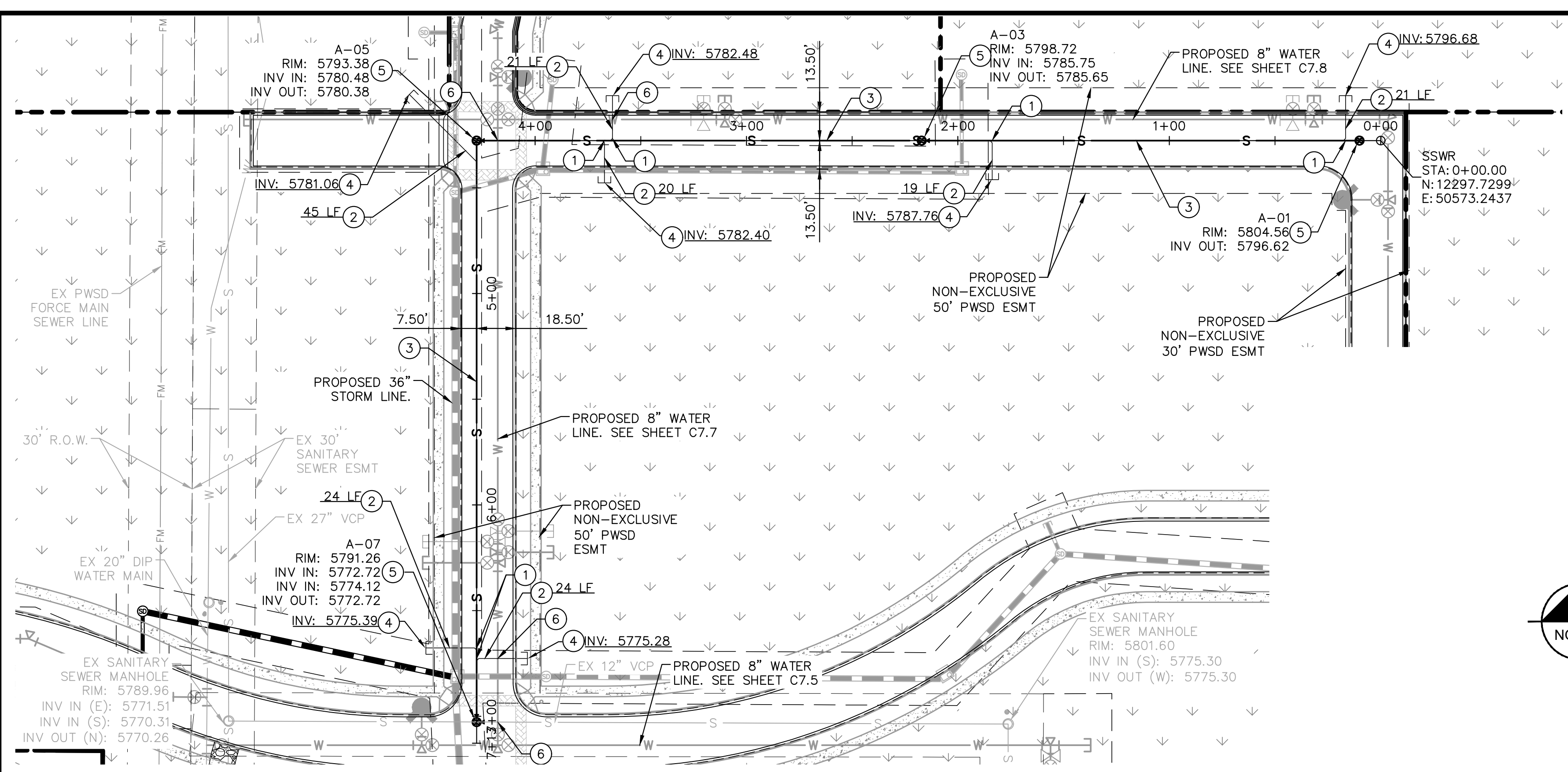
**C7.1**



C:\Users\jrk\OneDrive\Desktop\Drawings\096502001CV\_UT.dwg KGBR\jrk Job: 10/08/2019 10:57 AM  
 THE INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE. IT IS THE PROPERTY OF KIMLEY-HORN AND ASSOCIATES, INC. AND IS TO BE USED ONLY FOR THE PROJECT AND LOCATION SPECIFICALLY IDENTIFIED HEREIN. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



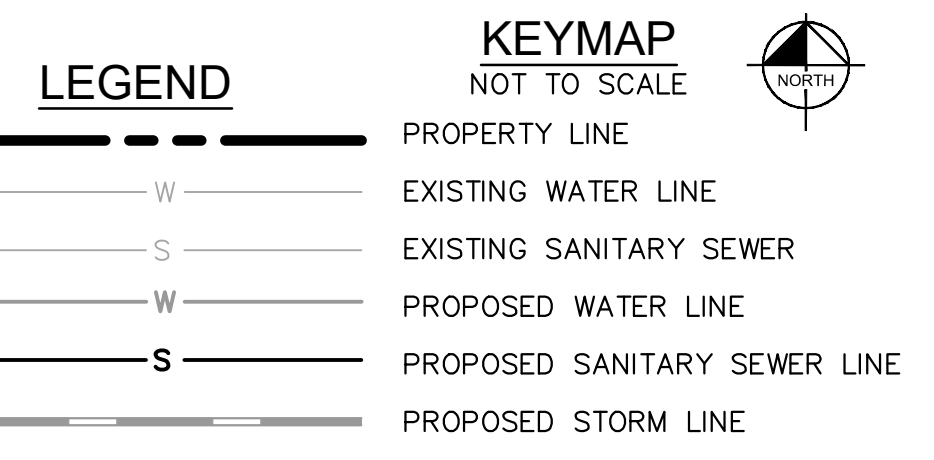
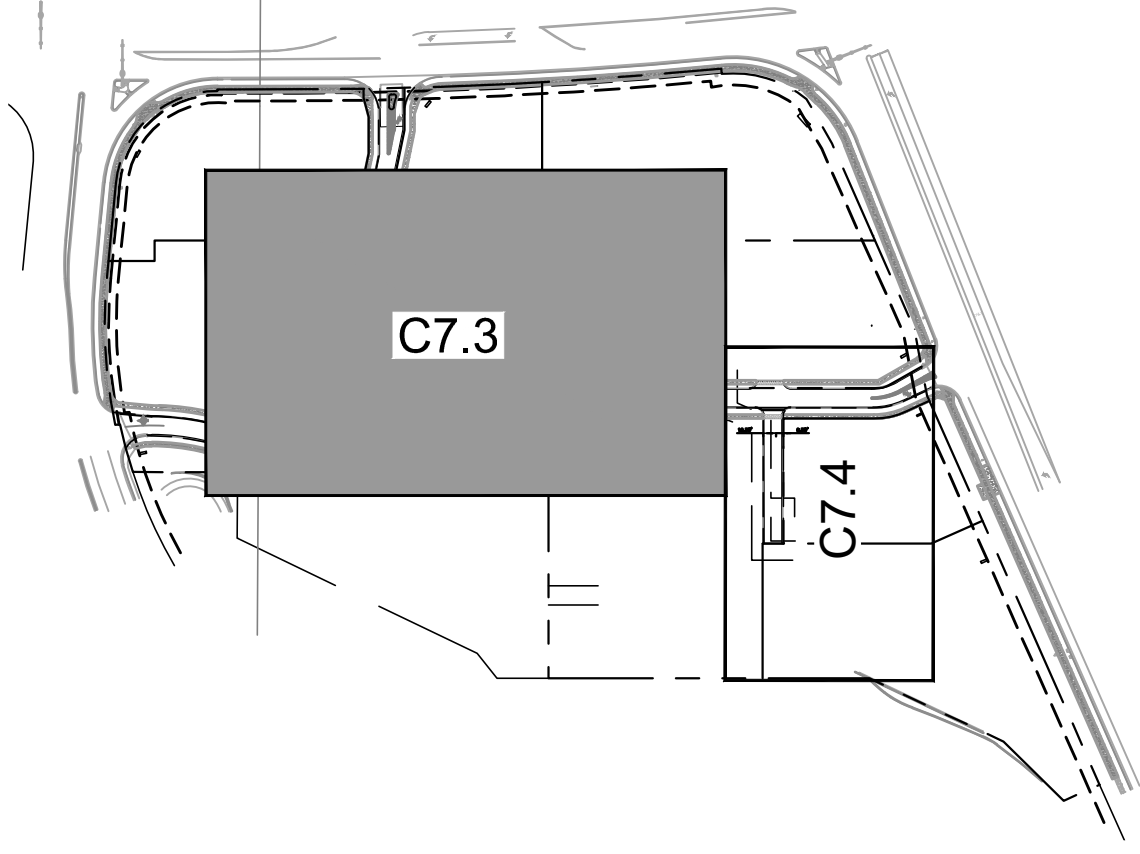
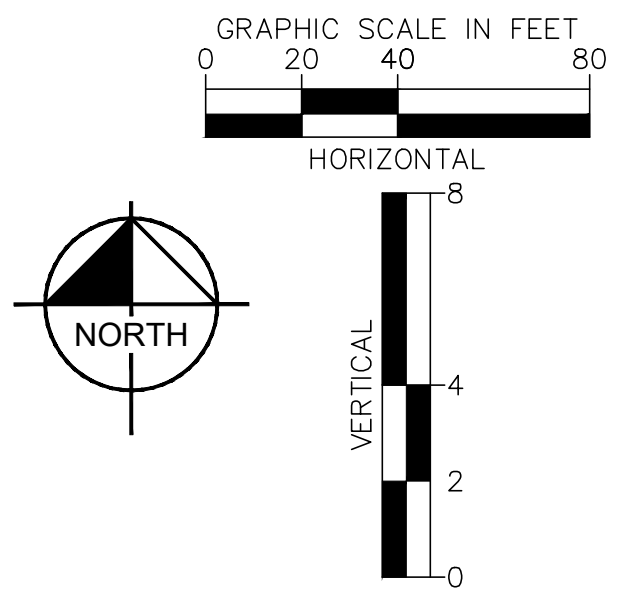
C:\Users\josh.kasper\Documents\Projects\2020\10-08-2020\10-08-2020.dwg - Kasper, Josh - 10/08/2020, 10:57 AM  
 THE DESIGNER, ENGINEER, ARCHITECT OR OTHER PROFESSIONAL DESIGNER HAS PREPARED, SEALS, SIGNED AND DATED THIS DOCUMENT AND ASSUMES ALL LIABILITY FOR ANY AND ALL DAMAGES, INCLUDING REASONABLE ATTORNEY'S FEES, THAT MAY BE INCURRED BY ANY PARTY AS A RESULT OF ANY NEGLIGENCE, ACTIVE OR PASSIVE, OF THE DESIGNER, ENGINEER, ARCHITECT OR OTHER PROFESSIONAL DESIGNER. THE DESIGNER, ENGINEER, ARCHITECT OR OTHER PROFESSIONAL DESIGNER DOES NOT WARRANT THAT THE INFORMATION CONTAINED HEREIN IS COMPLETE, ACCURATE OR CURRENT. THE USER OF THIS DOCUMENT SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



**KEY NOTES**

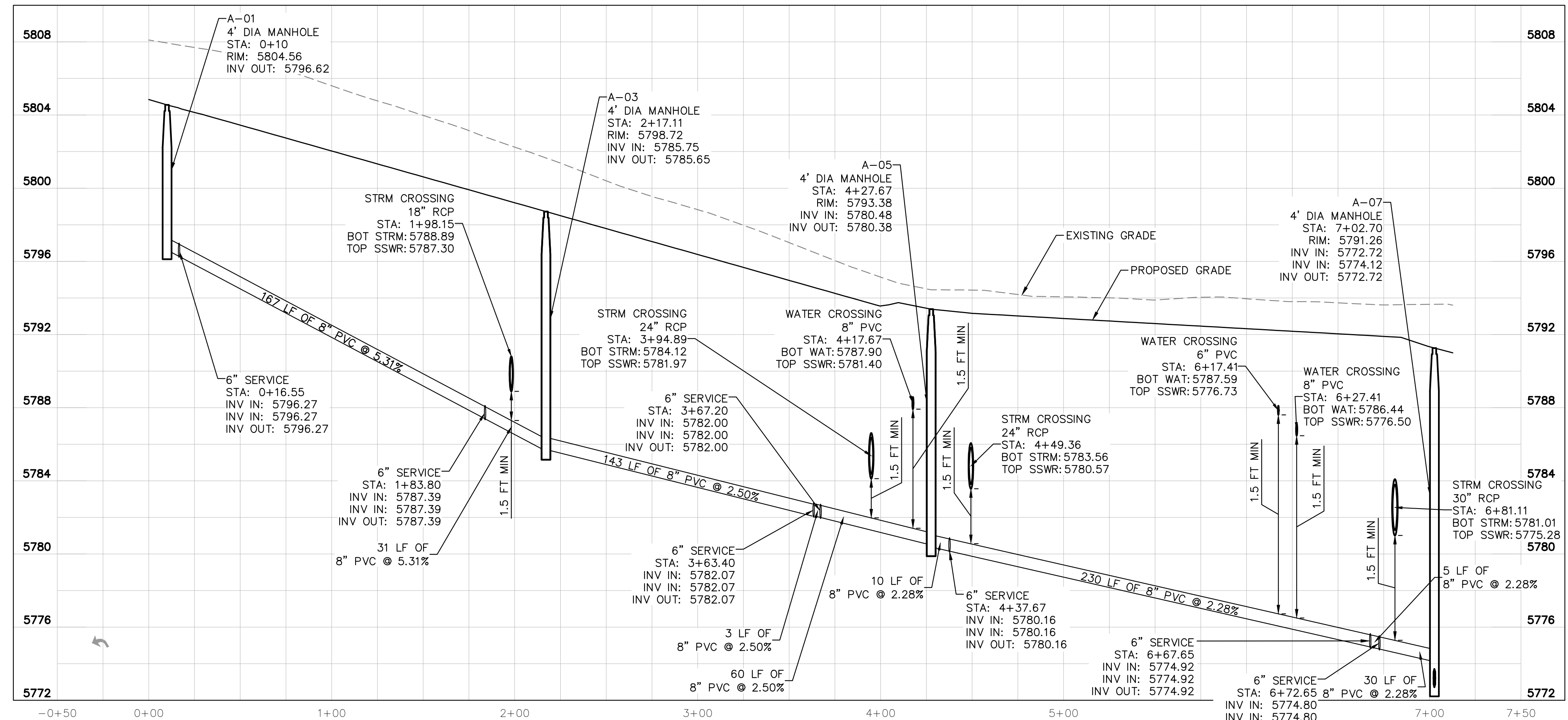
- ① WYE CONNECTION INTO PROPOSED 8" PVC SANITARY SEWER MAIN
- ② 6" SDR 35 PVC SANITARY SEWER LINE LATERAL, LENGTH PER PLAN, SLOPE 1% MINIMUM
- ③ 8" SDR 35 PVC PUBLIC SANITARY SEWER LINE, LENGTH AND SLOPE PER PROFILE.
- ④ PROPOSED CLEANOUT. SEE DETAILS.
- ⑤ PROPOSED SANITARY SEWER MANHOLE. SEE DETAILS.
- ⑥ PROPOSED WATER/SEWER CROSSING TO MAINTAIN 18" VERTICAL SEPARATION

**APPROVED**  
 Oct 08 2020  
**PARKER WATER AND SANITATION DISTRICT**



**SANITARY SEWER NOTES**

1. ALL SANITARY SEWER CONSTRUCTION SHALL CONFORM TO THE PARKER WATER AND SANITATION DISTRICT SPECIFICATION.
2. ALL SEWER MAINS SHALL BE PVC, ASTM D-3034, SDR 35 OR APPROVED EQUAL. ALL SEWER MAIN SIZE IS 8" IN DIAMETER UNLESS OTHERWISE NOTED.
3. SEWER RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATIONS. RING AND COVER SHALL BE SET IN CENTERED CONCRETE RINGS WITH RAM-NECK FOR ADJUSTMENT TO MATCH FINAL PAVEMENT ELEVATIONS.
4. THE CONTRACTOR AND SURVEY CREW SHALL VERIFY ELEVATIONS OF EXISTING SEWER LINES AND MANHOLES TO BE TIED TO PRIOR TO CONSTRUCTION OR STAKING OF SANITARY SEWER.
5. NO UNDERDRAIN SYSTEM WILL BE ALLOWED TO BE PLACED IN MAINLINE OR SEWER SERVICE TRENCHES.
6. SEWER SERVICE TEES FOR EACH UNIT SHALL BE STAKED BY A SURVEY CREW AND FURNISHED AND INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL FURNISH TO THE ENGINEER "AS CONSTRUCTED" LOCATION OF TEES. SEWER WYES SHALL BE USED RATHER THAN TEES.
7. ALL MANHOLES SHALL BE 48-INCHES IN DIAMETER WITH 24-INCH RING AND COVER, ECCENTRIC CONE UNLESS OTHERWISE SPECIFIED.
8. PIPE BEDDING SHALL BE CLASS "B" AND SHALL CONFORM TO ASTM C-33 OR D-448 GRADATION NO. 6 OR NO. 67.
9. AT LEAST FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION, A PRE-CONSTRUCTION MEETING WILL BE HELD AT THE OFFICE OF THE DISTRICT ENGINEER AND ATTENDED BY THE CONTRACTOR AND REPRESENTATIVES OF THE OTHER APPROVING AGENCIES. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE DISTRICT ENGINEER TO SCHEDULE THIS MEETING.
10. ALL PIPE LENGTHS ARE APPROXIMATE.
11. THE CONTRACTOR SHALL HAVE IN HIS POSSESSION AT ALL TIMES ONE (1) SIGNED COPY OF THE PLANS WHICH HAVE BEEN APPROVED BY THE PARKER WATER AND SANITATION DISTRICT AND THE DISTRICT ENGINEER AND ONE (1) COPY OF THE LATEST PARKER WATER AND SANITATION DISTRICT SPECIFICATION MANUAL.
12. ALL MANHOLES SHALL HAVE SHAPED INVERTS.
13. ALL SEWER LINES SHALL BE TESTED IN ACCORDANCE WITH THE PARKER WATER AND SANITATION DISTRICT STANDARDS AND SPECIFICATIONS PRIOR TO ACCEPTANCE OR ANY CONNECTION TO AN EXISTING SEWER LINE.
14. PRIOR TO START WORK WHERE SEWER MAIN TO BE INSTALLED INTO EXISTING DISTRICT SEWER SYSTEMS, THE NEAREST MANHOLE TO THE POINT OF TIE-IN SHALL BE PLUGGED WITH A PLUMBER'S PLUG ON THE INLET SIDE BY THE CONTRACTOR. THIS PLUG SHALL REMAIN IN PLACE UNTIL FINAL ACCEPTANCE BY THE DISTRICT. ITS PURPOSE SHALL BE TO PREVENT ANY MUD, WATER OR OTHER MATERIALS FROM ENTERING THE LINE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PUMPING AND CLEANING THESE MANHOLES AND REMOVING THE PLUG WHEN SO INSTRUCTED BY THE DISTRICT.
15. PRIOR TO PROBATIONARY ACCEPTANCE WALK-THROUGH, THE CLIENT SHALL JET CLEAN THE ENTIRE SANITARY SEWER SYSTEM AND PUMP OUT AT THE PLUGGED MANHOLE.
16. DOUBLE CLEANOUTS SHALL BE PROVIDED WITHIN 5 FEET OF EACH BUILDING CONNECTION. REFER TO MEP PLANS FOR CONTINUATION INSIDE BUILDING.
17. ALL SANITARY SERVICES TO CONNECT TO MAIN VIA WYE CONNECTION.
18. AT ALL POTABLE WATER MAIN AND SANITARY SEWER CROSSINGS WHERE THE PROPOSED SANITARY SEWER LINE LIES ABOVE THE PROPOSED WATER MAIN OR WITHIN 18" BELOW THE WATER MAIN, A CONCRETE ENCASUREMENT IS TO BE PROVIDED ALONG THE SANITARY SEWER PIPE FOR 10 FT ON EITHER SIDE OF THE CROSSING. CONCRETE ENCASUREMENT TO BE PROVIDED PER THE PWSD SECTION 9.3.2.
19. AT ALL STORM SEWER AND SANITARY SEWER CROSSINGS WHERE THE PROPOSED SANITARY SEWER LINE LIES ABOVE THE PROPOSED STORM SEWER OR WITHIN 18" BELOW THE STORM SEWER, A CONCRETE ENCASUREMENT IS TO BE PROVIDED ALONG THE SANITARY SEWER PIPE FOR 10 FT ON EITHER SIDE OF THE CROSSING. CONCRETE ENCASUREMENT TO BE PROVIDED PER THE PWSD SECTION 9.3.2.
20. PROVIDE WATER LOWERING PER PWSD WATER DETAIL #27 WHERE CONFLICTS WITH STORM SEWER AND WATER SERVICES MAY EXIST.



**SANITARY SEWER MAIN PROFILE A**  
 STRUCTURE SSWR-A-01 TO SSWR-A-07  
 HORIZONTAL SCALE: 1"=40'  
 VERTICAL SCALE: 1"=8'

**CAUTION**  
 CONTRACTOR IS TO VERIFY PRESENCE AND EXACT UTILITIES PRIOR TO CONSTRUCTION.



NO.	REVISION	BY	DATE

**Kimley»Horn**  
 2020 KIMLEY-HORN AND ASSOCIATES, INC.  
 4582 South Ulster Street, Suite 1500  
 Denver, Colorado 80237 (303) 228-2300

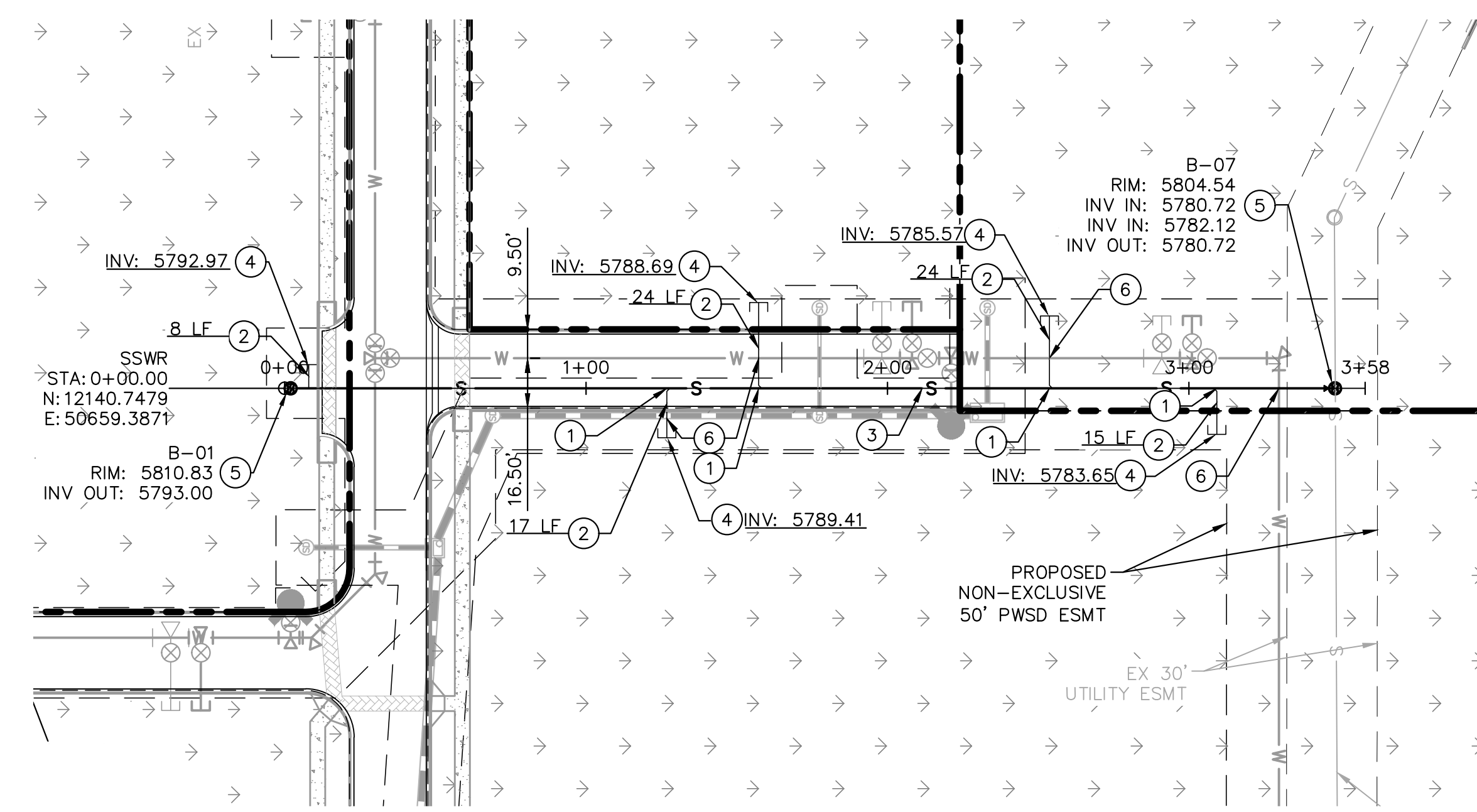
DESIGNED BY: DLS  
 DRAWN BY: JRK  
 CHECKED BY: DLS  
 DATE: 10/07/20

PARKER AND PINE FILING 1  
 PARKER, CO  
 CONSTRUCTION DOCUMENTS  
**SANITARY SEWER PLAN AND PROFILE**



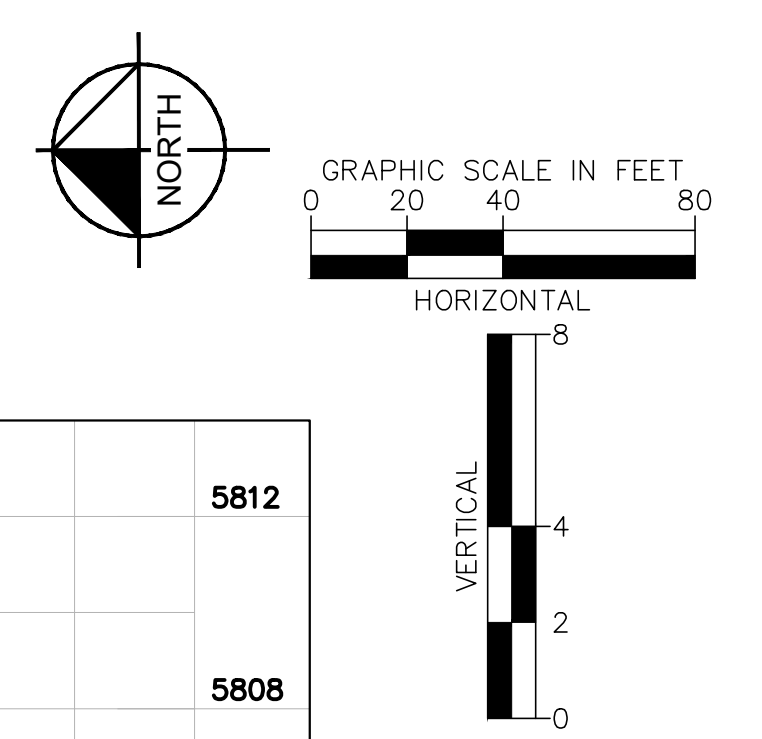
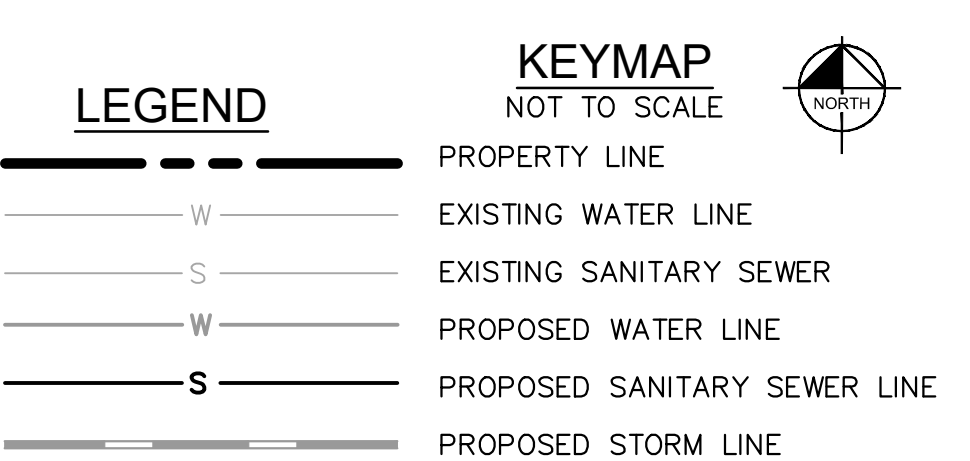
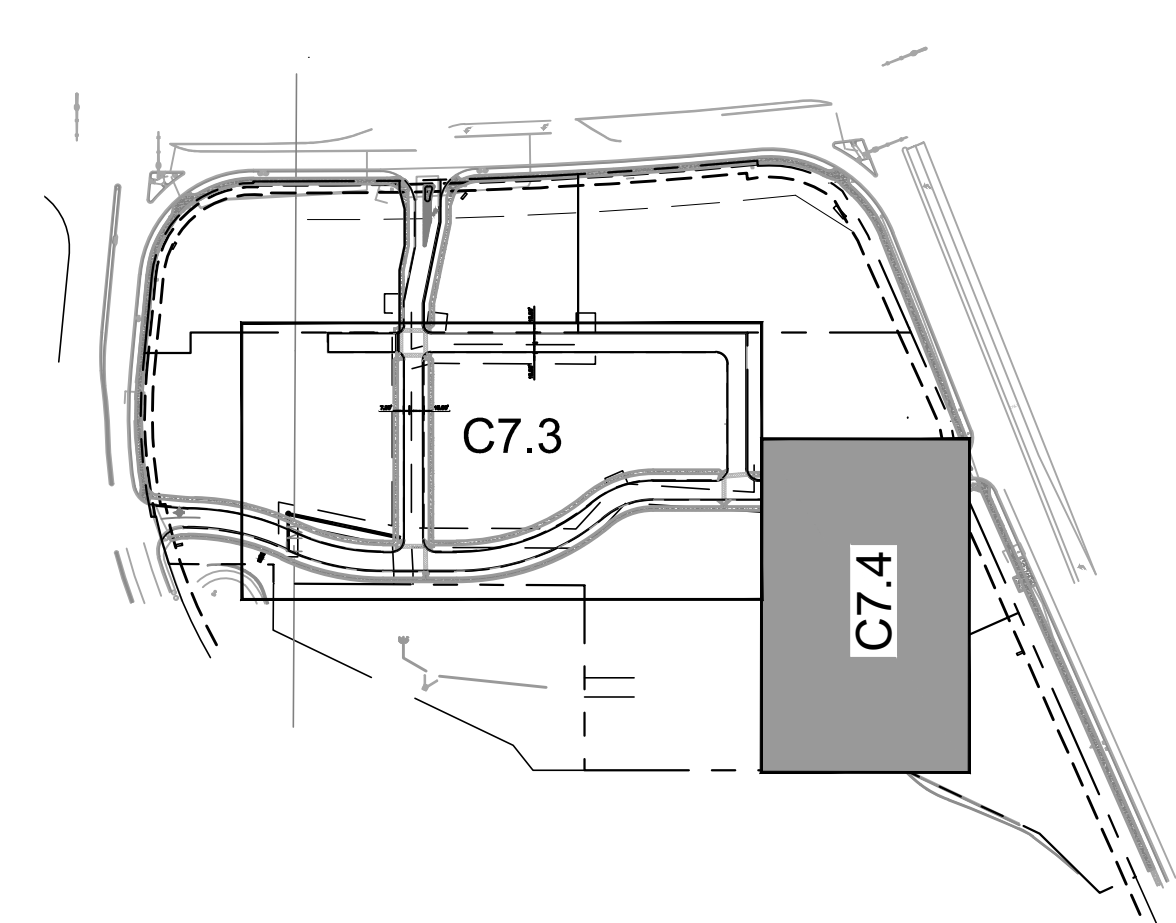
PROJECT NO.  
 096502001  
 DRAWING NAME  
 096502001SS  
**C7.3**

C:\Users\jks\OneDrive\Desktop\Projects\CADD\Projects\09650201SS.dwg - K:\projects - JKS - 10/08/2020 10:57 AM  
 THE DESIGNER'S OFFICE SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



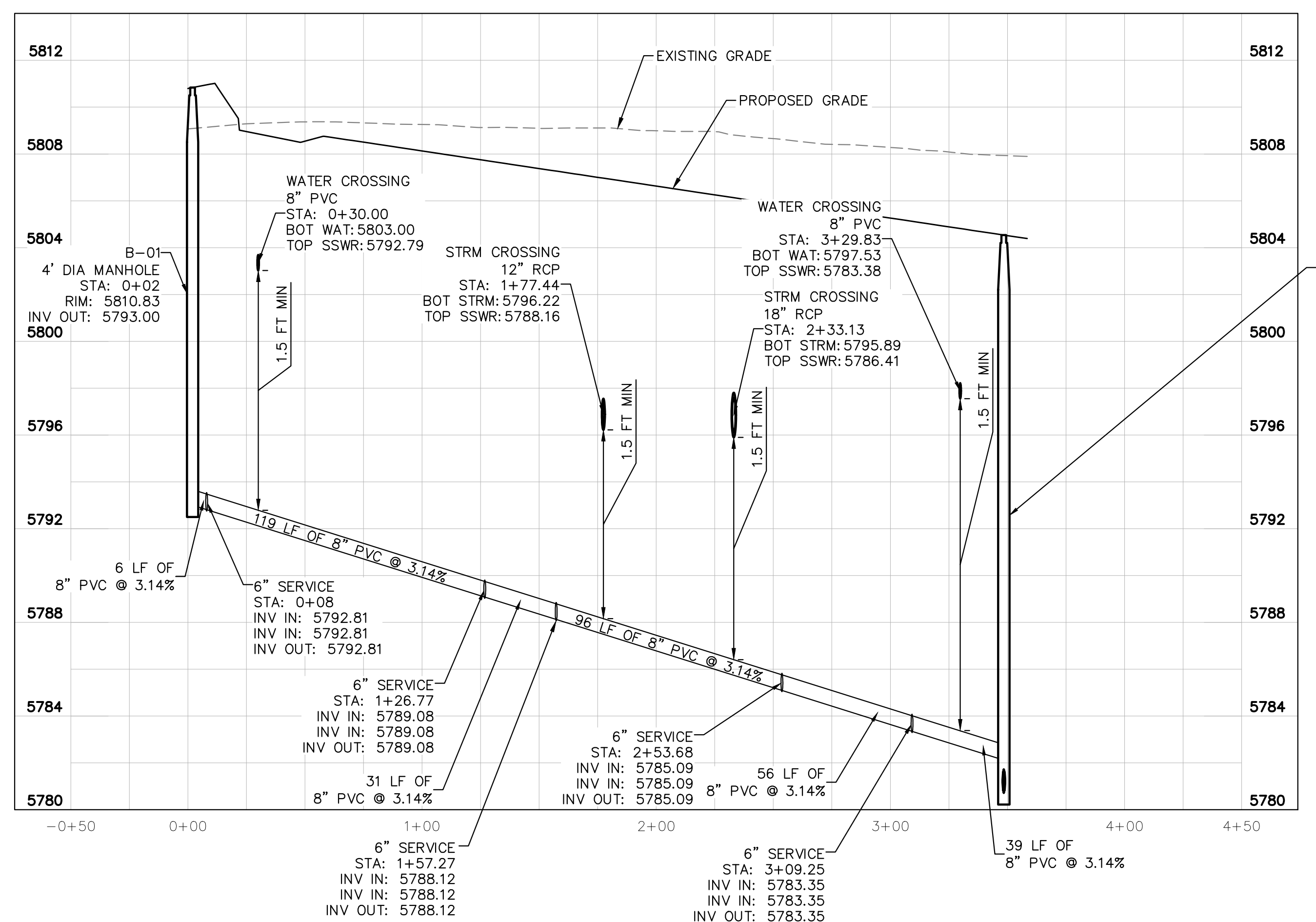
**KEY NOTES**

- ① WYE CONNECTION INTO PROPOSED 8" SANITARY SEWER MAIN
- ② 6" SDR 35 PVC SANITARY SEWER LINE LATERAL, LENGTH PER PLAN, SLOPE 1% MINIMUM
- ③ 8" SDR 35 PVC PUBLIC SANITARY SEWER LINE, LENGTH AND SLOPE PER PROFILE.
- ④ PROPOSED CLEANOUT. SEE DETAILS.
- ⑤ PROPOSED SANITARY SEWER MANHOLE. SEE DETAILS.
- ⑥ PROPOSED WATER/SEWER CROSSING TO MAINTAIN 18" VERTICAL SEPARATION



**SANITARY SEWER NOTES**

1. ALL SANITARY SEWER CONSTRUCTION SHALL CONFORM TO THE PARKER WATER AND SANITATION DISTRICT SPECIFICATION.
2. ALL SEWER MAINS SHALL BE PVC, ASTM D-3034, SDR 35 OR APPROVED EQUAL. ALL SEWER MAIN SIZE IS 8" IN DIAMETER UNLESS OTHERWISE NOTED.
3. SEWER RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATIONS. RING AND COVER SHALL BE SET IN CENTERED CONCRETE RINGS WITH RAM-NECK FOR ADJUSTMENT TO MATCH FINAL PAVEMENT ELEVATIONS.
4. THE CONTRACTOR AND SURVEY CREW SHALL VERIFY ELEVATIONS OF EXISTING SEWER LINES AND MANHOLES TO BE TIED TO PRIOR TO CONSTRUCTION OR STAKING OF SANITARY SEWER.
5. NO UNDERDRAIN SYSTEM WILL BE ALLOWED TO BE PLACED IN MAINLINE OR SEWER SERVICE TRENCHES.
6. SEWER SERVICE TEES FOR EACH UNIT SHALL BE STAKED BY A SURVEY CREW AND FURNISHED AND INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL FURNISH TO THE ENGINEER "AS CONSTRUCTED" LOCATION OF TEES. SEWER WYES SHALL BE USED RATHER THAN TEES.
7. ALL MANHOLES SHALL BE 48-INCHES IN DIAMETER WITH 24-INCH RING AND COVER, ECCENTRIC CONE UNLESS OTHERWISE SPECIFIED.
8. PIPE BEDDING SHALL BE CLASS "B" AND SHALL CONFORM TO ASTM C-33 OR D-448 GRADATION NO. 6 OR NO. 67.
9. AT LEAST FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION, A PRE-CONSTRUCTION MEETING WILL BE HELD AT THE OFFICE OF THE DISTRICT ENGINEER AND ATTENDED BY THE CONTRACTOR AND REPRESENTATIVES OF THE OTHER APPROVING AGENCIES. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE DISTRICT ENGINEER TO SCHEDULE THIS MEETING.
10. ALL PIPE LENGTHS ARE APPROXIMATE.
11. THE CONTRACTOR SHALL HAVE IN HIS POSSESSION AT ALL TIMES ONE (1) SIGNED COPY OF THE PLANS WHICH HAVE BEEN APPROVED BY THE PARKER WATER AND SANITATION DISTRICT AND THE DISTRICT ENGINEER AND ONE (1) COPY OF THE LATEST PARKER WATER AND SANITATION DISTRICT SPECIFICATION MANUAL.
12. ALL MANHOLES SHALL HAVE SHAPED INVERTS.
13. ALL SEWER LINES SHALL BE TESTED IN ACCORDANCE WITH THE PARKER WATER AND SANITATION DISTRICT STANDARDS AND SPECIFICATIONS PRIOR TO ACCEPTANCE OR ANY CONNECTION TO AN EXISTING SEWER LINE.
14. PRIOR TO START WORK WHERE SEWER MAIN TO BE INSTALLED INTO EXISTING DISTRICT SEWER SYSTEMS, THE NEAREST MANHOLE TO THE POINT OF TIE-IN SHALL BE PLUGGED WITH A PLUMBER'S PLUG ON THE INLET SIDE BY THE CONTRACTOR. THIS PLUG SHALL REMAIN IN PLACE UNTIL FINAL ACCEPTANCE BY THE DISTRICT. ITS PURPOSE SHALL BE TO PREVENT ANY MUD, WATER OR OTHER MATERIALS FROM ENTERING THE LINE DURING CONSTRUCTION. THESE MANHOLES SHALL BE RESPONSIBLE FOR PUMPING AND CLEANING THESE MANHOLES AND REMOVING THE PLUG WHEN SO INSTRUCTED BY THE DISTRICT.
15. PRIOR TO PROBATIONARY ACCEPTANCE WALK-THROUGH, THE CLIENT SHALL JET CLEAN THE ENTIRE SANITARY SEWER SYSTEM AND PUMP OUT AT THE PLUGGED MANHOLE.
16. DOUBLE CLEANOUTS SHALL BE PROVIDED WITHIN 5 FEET OF EACH BUILDING CONNECTION. REFER TO MEP PLANS FOR CONTINUATION INSIDE BUILDING.
17. ALL SANITARY SERVICES TO CONNECT TO MAIN VIA WYE CONNECTION.
18. AT ALL POTABLE WATER MAIN AND SANITARY SEWER CROSSINGS WHERE THE PROPOSED SANITARY SEWER LINE LIES ABOVE THE PROPOSED WATER MAIN OR WITHIN 18" BELOW THE WATER MAIN, A CONCRETE ENCASUREMENT IS TO BE PROVIDED ALONG THE SANITARY SEWER PIPE FOR 10 FT ON EITHER SIDE OF THE CROSSING. CONCRETE ENCASUREMENT TO BE PROVIDED PER THE PWSD SECTION 9.3.2.
19. AT ALL STORM SEWER AND SANITARY SEWER CROSSINGS WHERE THE PROPOSED SANITARY SEWER LINE LIES ABOVE THE PROPOSED STORM SEWER OR WITHIN 18" BELOW THE STORM SEWER, A CONCRETE ENCASUREMENT IS TO BE PROVIDED ALONG THE SANITARY SEWER PIPE FOR 10 FT ON EITHER SIDE OF THE CROSSING. CONCRETE ENCASUREMENT TO BE PROVIDED PER THE PWSD SECTION 9.3.2.
20. PROVIDE WATER LOWERING PER PWSD WATER DETAIL #27 WHERE CONFLICTS WITH STORM SEWER AND WATER SERVICES MAY EXIST.



**SANITARY SEWER MAIN PROFILE**  
STRUCTURE SSWR-B-01 TO SSWR-B-07

HORIZONTAL SCALE: 1"=40'  
VERTICAL SCALE: 1"=8'

**APPROVED**  
 Oct 08 2020  
 PARKER WATER AND  
 SANITATION DISTRICT

**CAUTION**  
 CONTRACTOR IS TO  
 VERIFY PRESENCE AND  
 EXACT UTILITIES PRIOR  
 TO CONSTRUCTION.



NO.	REVISION	BY	DATE

**Kimley»Horn**  
 2020 KIMLEY-HORN AND ASSOCIATES, INC.  
 4582 South Ulster Street, Suite 1500  
 Denver, Colorado 80237 (303) 228-2300

DESIGNED BY: DLS  
 DRAWN BY: JRK  
 CHECKED BY: DLS  
 DATE: 10/07/20

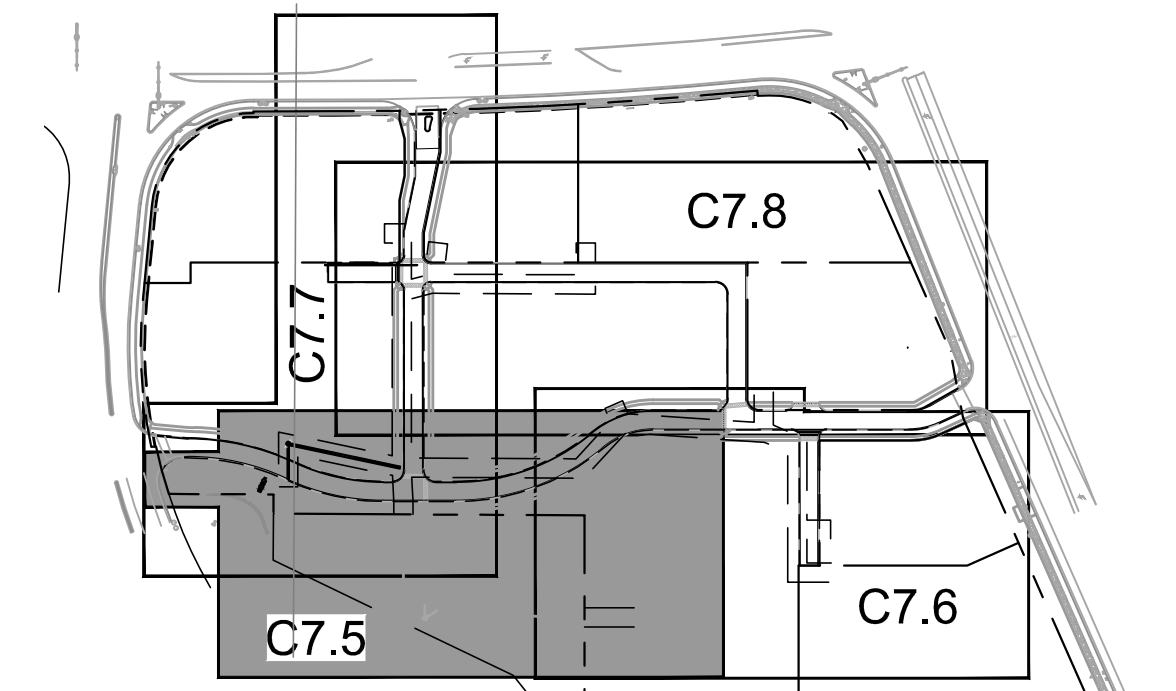
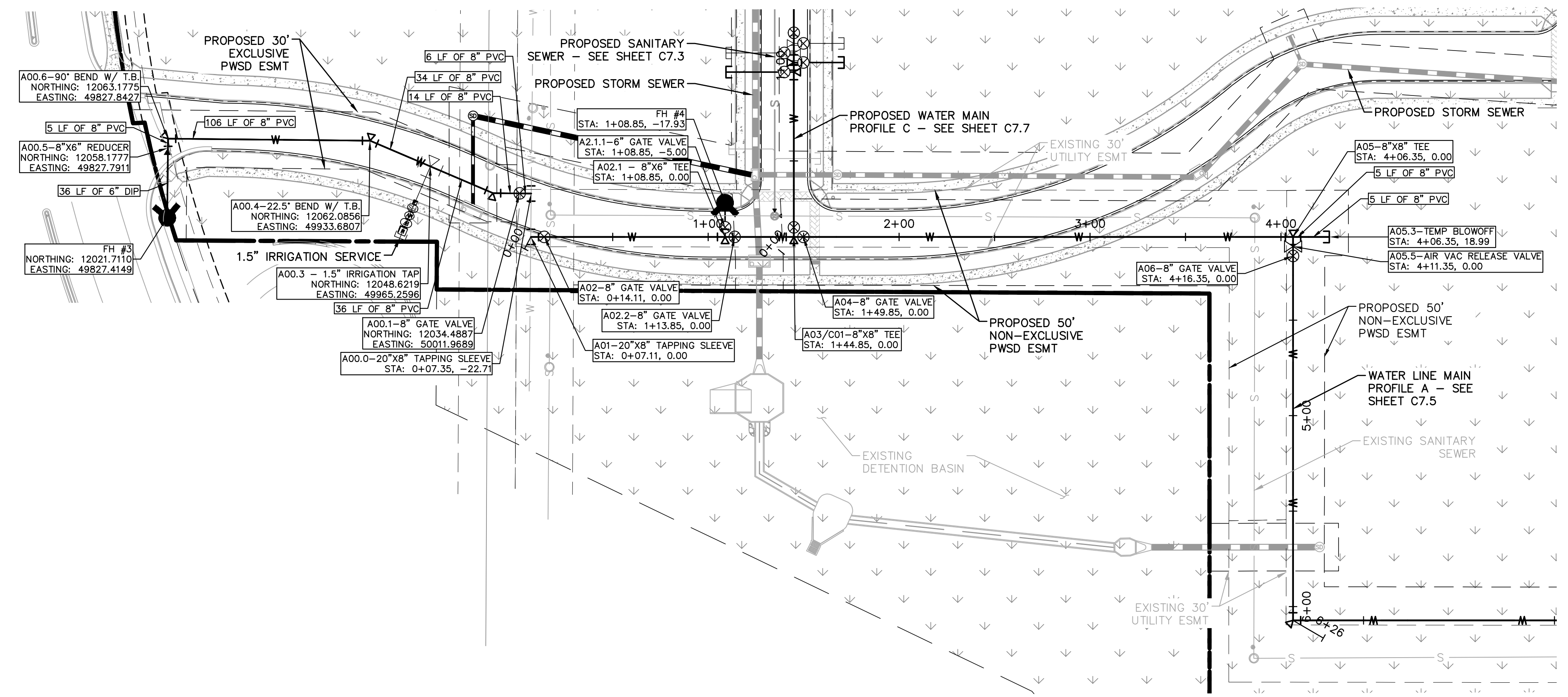
PARKER AND PINE FILING 1  
 PARKER, CO  
 CONSTRUCTION DOCUMENTS  
**SANITARY SEWER PLAN AND PROFILE**



PROJECT NO.  
 096502001  
 DRAWING NAME  
 096502001SS

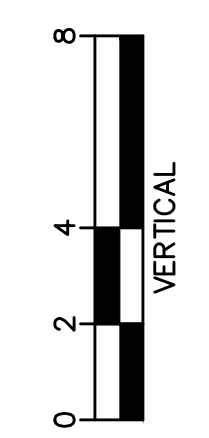
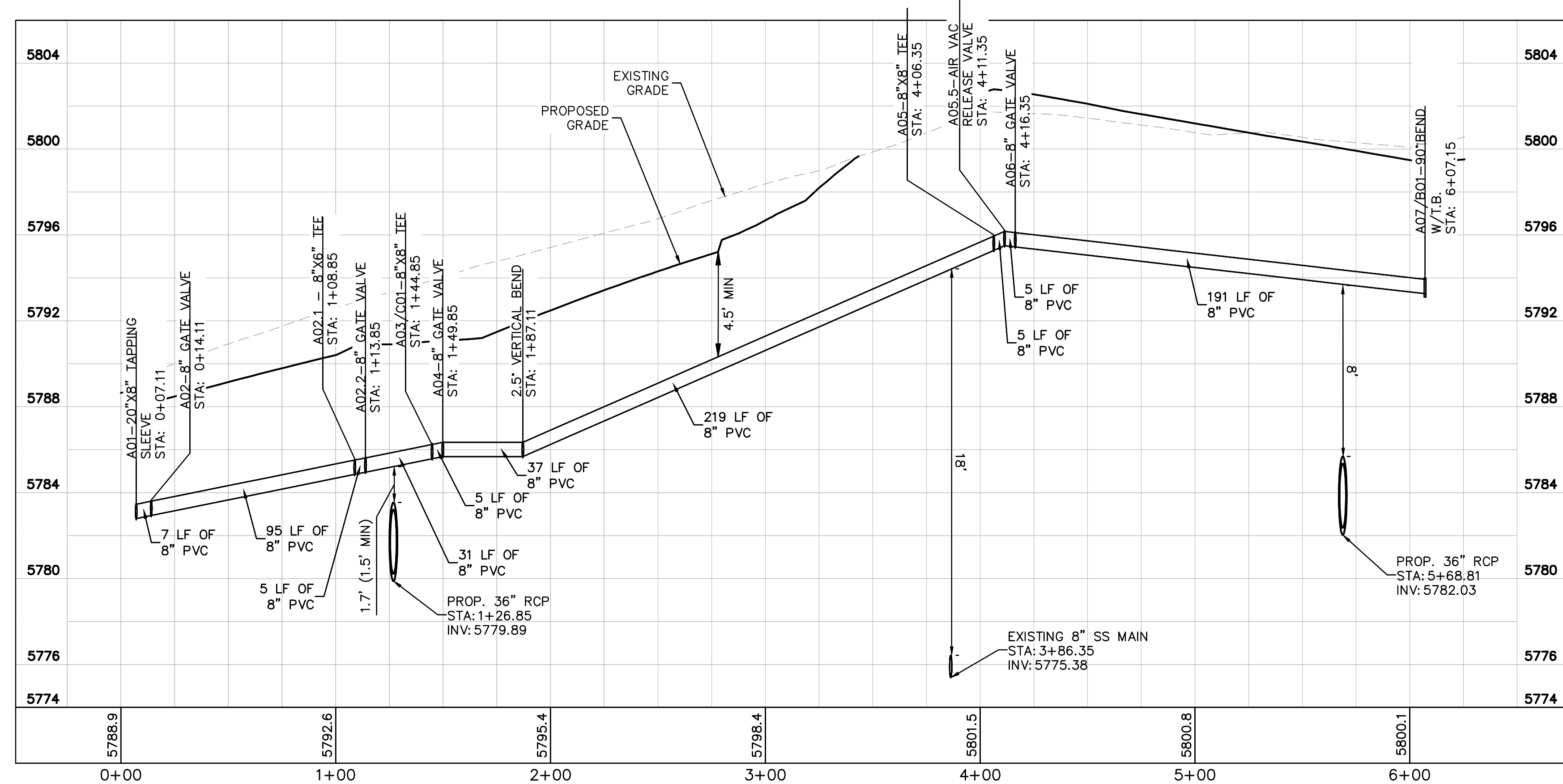
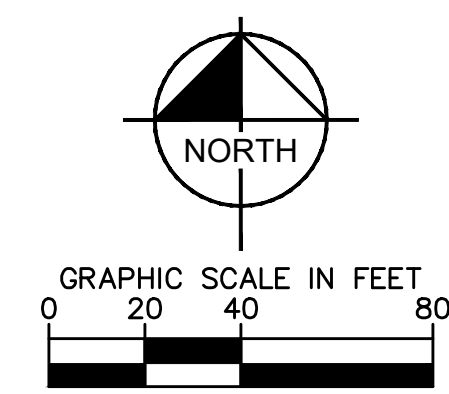
**C7.4**

C:\Users\jacob.kasper\Documents\Projects\096502001\WT\_DP.dwg Kasper.jac 10/06/2010 10:57 AM  
 THIS DOCUMENT, TOGETHER WITH ALL ATTACHED FILES, IS THE PROPERTY OF KIMLEY-HORN AND ASSOCIATES, INC. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFIC PURPOSES AND IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE WRITTEN PERMISSION OF KIMLEY-HORN AND ASSOCIATES, INC. ALL RIGHTS ARE RESERVED.



**LEGEND**

---	PROPERTY LINE
---	EXISTING WATER LINE
---	EXISTING SANITARY SEWER
---	PROPOSED WATER LINE
---	PROPOSED SANITARY SEWER LINE
---	PROPOSED STORM LINE



**APPROVED**  
 Oct 08 2020  
 PARKER WATER AND SANITATION DISTRICT

**WATER NOTES**

- CONTRACTOR TO POTHOLE EXISTING UTILITY LINES AT WATER LINE CROSSING AREAS PRIOR TO CONSTRUCTION.
- WATER LINE CONNECTION ELEVATION TO EXISTING WATER MAINS IS APPROXIMATE. CONTRACTOR TO POTHOLE AND VERIFY TIE IN ELEVATION PRIOR TO CONSTRUCTION OF WATER MAIN.
- CONTRACTOR TO MEET THE INSTALLATION REQUIREMENTS BY THE PARKER WATER AND SANITATION DISTRICT DESIGN STANDARDS AND CONSTRUCTION SPECIFICATIONS.
- 24 UNIT BUILDINGS (BUILDINGS 1-7) SHALL PROVIDE INTERNAL BACKFLOW PREVENTER AND EXTERNAL 2" DOMESTIC METER.
- 36 UNIT (BUILDING 8) SHALL PROVIDE INTERNAL BACK FLOW PREVENTERS AND 1-1/2" DOMESTIC METER.
- VERTICAL BENDS AND DEFLECTIONS MAYBE UTILIZED TO PROVIDE VERTICAL CHANGES IN ACCORDANCE WITH PWSD STANDARDS AS NEEDED.
- AT ALL POTABLE WATER MAIN AND SANITARY SEWER CROSSINGS WHERE THE PROPOSED SANITARY SEWER LINE LIES ABOVE THE PROPOSED WATER MAIN OR WITHIN 18" BELOW THE WATER MAIN, A CONCRETE ENCASUREMENT IS TO BE PROVIDED ALONG THE SANITARY SEWER PIPE FOR 10 FT ON EITHER SIDE OF THE CROSSING. CONCRETE ENCASUREMENT TO BE PROVIDED PER THE PWSD SECTION 9.3.2.
- AT ALL STORM SEWER AND SANITARY SEWER CROSSINGS WHERE THE PROPOSED SANITARY SEWER LINE LIES ABOVE THE PROPOSED STORM SEWER OR WITHIN 18" BELOW THE STORM SEWER, A CONCRETE ENCASUREMENT IS TO BE PROVIDED ALONG THE SANITARY SEWER PIPE FOR 10 FT ON EITHER SIDE OF THE CROSSING. CONCRETE ENCASUREMENT TO BE PROVIDED PER THE PWSD SECTION 9.3.2.
- ALL WATER LINES SHALL BE INSTALLED AT LEAST 4.5 FEET BELOW THE OFFICIAL STREET GRADE AND IN ALL OTHER PLACES AT LEAST 4.5 FEET BELOW THE SURFACE OF THE GROUND.

**WATER MAIN PROFILE A**  
 STRUCTURE A01 TO A07

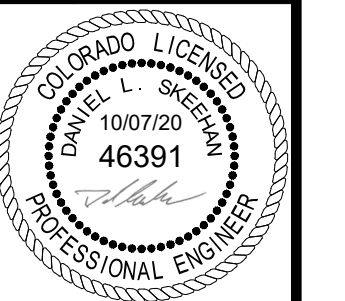
HORIZONTAL SCALE: 1"=40'  
 VERTICAL SCALE: 1"=4'

NO.	REVISION	BY	DATE	APPROVED

**Kimley»Horn**  
 2020 KIMLEY-HORN AND ASSOCIATES, INC.  
 4582 South Ulster Street, Suite 1500  
 Denver, Colorado 80237 (303) 228-2300

DESIGNED BY: DLS  
 DRAWN BY: JRK  
 CHECKED BY: DLS  
 DATE: 10/07/20

PARKER AND PINE FILING 1  
 PARKER, CO  
 CONSTRUCTION DOCUMENTS  
**WATER PLAN AND PROFILE - A**



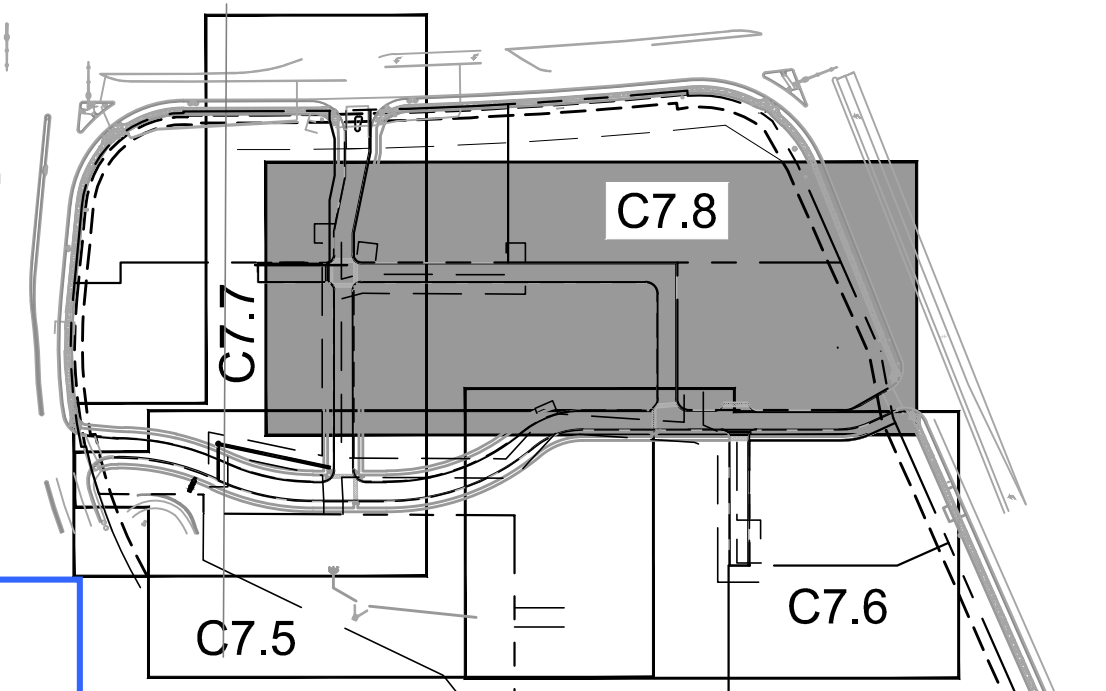
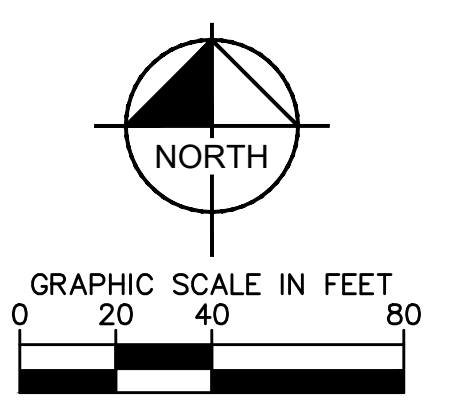
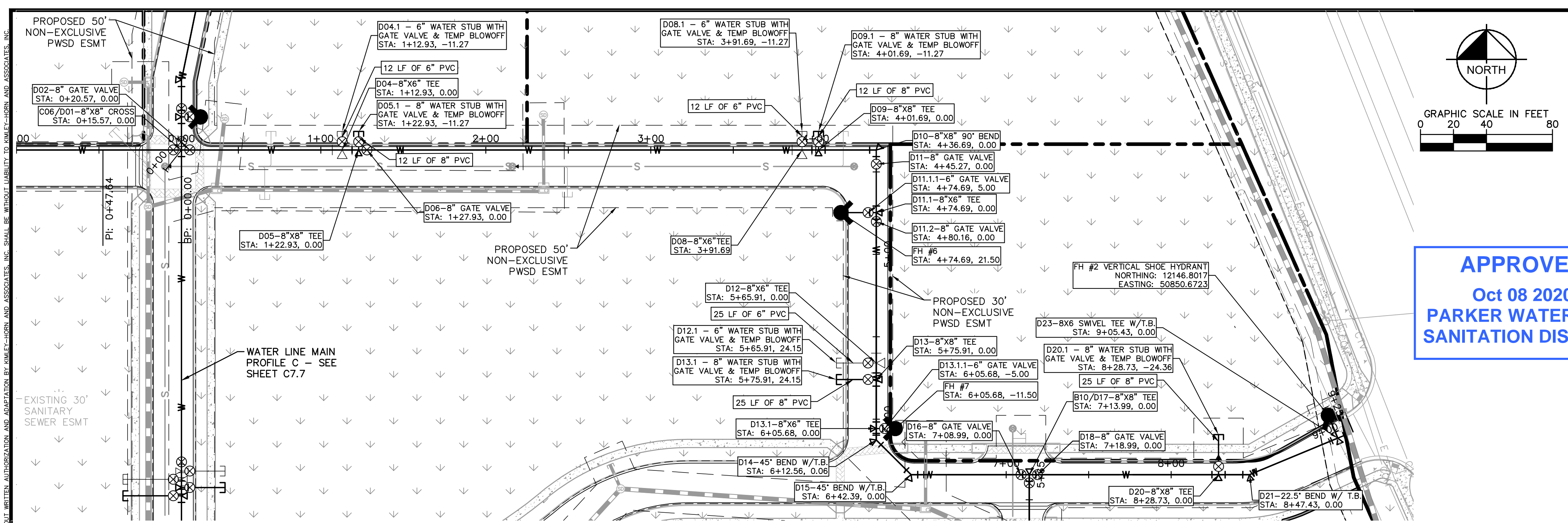
PROJECT NO.  
 096502001  
 DRAWING NAME  
 096502001WT-PP  
**C7.5**



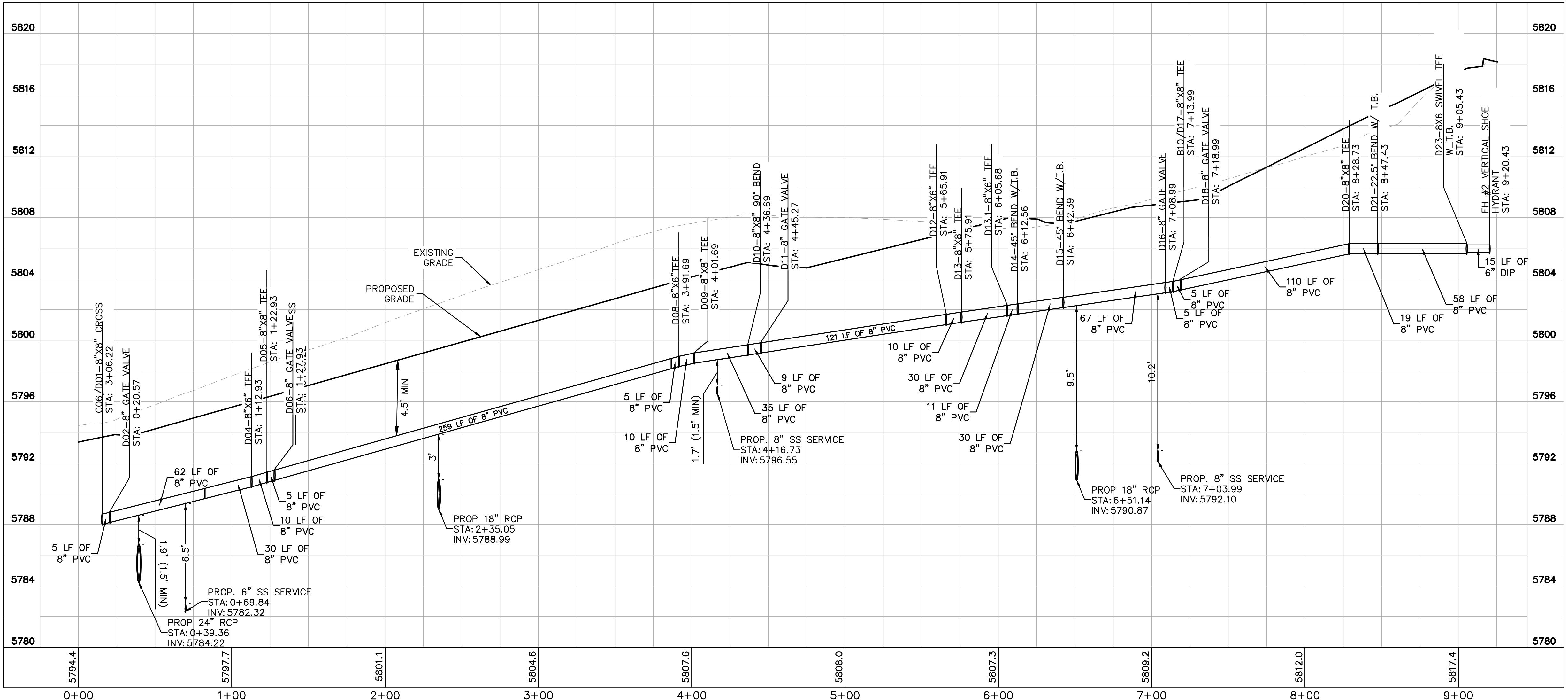
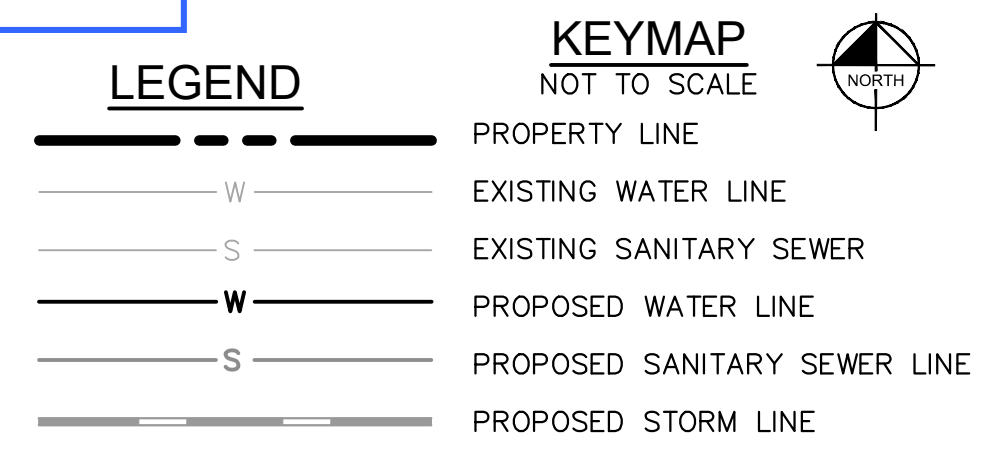




C:\Users\josh.kimley\Documents\Projects\2020\095502001\WT\_PP.dwg Kimley-Horn Job: 10/06/2010 10:57 AM  
 THE DESIGNER, ENGINEER, ARCHITECT OR OTHER PROFESSIONAL DESIGNER IS NOT BEING LICENSED IN THE STATE OF COLORADO. ANY USE OF THIS DESIGN OR DRAWING FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

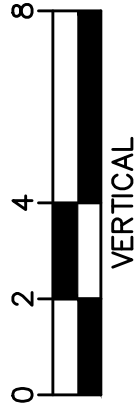


**APPROVED**  
 Oct 08 2020  
**PARKER WATER AND SANITATION DISTRICT**



**WATER NOTES**

1. CONTRACTOR TO POTHOLE EXISTING UTILITY LINES AT WATER LINE CROSSING AREAS PRIOR TO CONSTRUCTION.
2. WATER LINE CONNECTION ELEVATION TO EXISTING WATER MAINS IS APPROXIMATE. CONTRACTOR TO POTHOLE AND VERIFY TIE IN ELEVATION PRIOR TO CONSTRUCTION OF WATER MAIN.
3. CONTRACTOR TO MEET THE INSTALLATION REQUIREMENTS BY THE PARKER WATER AND SANITATION DISTRICT DESIGN STANDARDS AND CONSTRUCTION SPECIFICATIONS.
4. 24 UNIT BUILDINGS (BUILDINGS 1-7) SHALL PROVIDE INTERNAL BACKFLOW PREVENTER AND EXTERNAL 2" DOMESTIC METER.
5. 36 UNIT (BUILDING 8) SHALL PROVIDE INTERNAL BACK FLOW PREVENTERS AND 1-1/2" DOMESTIC METER.
6. VERTICAL BENDS AND DEFLECTIONS MAYBE UTILIZED TO PROVIDE VERTICAL CHANGES IN ACCORDANCE WITH PWSD STANDARDS AS NEEDED.
7. AT ALL POTABLE WATER MAIN AND SANITARY SEWER CROSSINGS WHERE THE PROPOSED SANITARY SEWER LINE LIES ABOVE THE PROPOSED WATER MAIN OR WITHIN 18" BELOW THE WATER MAIN, A CONCRETE ENCASUREMENT IS TO BE PROVIDED ALONG THE SANITARY SEWER PIPE FOR 10 FT ON EITHER SIDE OF THE CROSSING. CONCRETE ENCASUREMENT TO BE PROVIDED PER THE PWSD SECTION 9.3.2.
8. AT ALL STORM SEWER AND SANITARY SEWER CROSSINGS WHERE THE PROPOSED SANITARY SEWER LINE LIES ABOVE THE PROPOSED STORM SEWER OR WITHIN 18" BELOW THE STORM SEWER, A CONCRETE ENCASUREMENT IS TO BE PROVIDED ALONG THE SANITARY SEWER PIPE FOR 10 FT ON EITHER SIDE OF THE CROSSING. CONCRETE ENCASUREMENT TO BE PROVIDED PER THE PWSD SECTION 9.3.2.
9. ALL WATER LINES SHALL BE INSTALLED AT LEAST 4.5 FEET BELOW THE OFFICIAL STREET GRADE AND IN ALL OTHER PLACES AT LEAST 4.5 FEET BELOW THE SURFACE OF THE GROUND.



**WATER MAIN PROFILE D**  
 STRUCTURE D01 TO FH #2  
 HORIZONTAL SCALE: 1"=40'  
 VERTICAL SCALE: 1"=4'

	DATE
	BY
	REVISION
	NO.

Kimley»Horn

2020 KIMLEY-HORN AND ASSOCIATES, INC.  
 4582 South Ulster Street, Suite 1500  
 Denver, Colorado 80237 (303) 228-2300

DESIGNED BY: DLS  
 DRAWN BY: JRK  
 CHECKED BY: DLS  
 DATE: 10/07/20

PARKER AND PINE FILING 1  
 PARKER, CO  
 CONSTRUCTION DOCUMENTS  
 WATER PLAN AND PROFILE - D



PROJECT NO.  
 096502001

DRAWING NAME  
 096502001WT-PP

C7.8



C:\Users\josh.kasper\Documents\Projects\2019\09550201UT-DT.dwg Kasper, Josh 10/19/2019 10:57 AM  
 This document was created using AutoCAD 2019. All dimensions are in feet and inches unless otherwise specified. All dimensions are to the center of the pipe unless otherwise specified. All dimensions are to the center of the pipe unless otherwise specified. All dimensions are to the center of the pipe unless otherwise specified.

**INSPECTION POLICY:**

- ALL SERVICE INSPECTIONS MUST BE SCHEDULED WITH THE DISTRICT OFFICE AT LEAST 24 HOURS IN ADVANCE OF THE REQUESTED INSPECTION.
- IF THE CONTRACTOR IS NOT READY FOR INSPECTION WHEN THE INSPECTOR ARRIVES AT THE SITE, A RE-INSPECTION WILL HAVE TO BE SCHEDULED IN ACCORDANCE WITH NOTE 1 ABOVE AND A RE-INSPECTION FEE CHARGED.
- SHOULD THE SERVICE LINES BE DAMAGED BY LATER CONSTRUCTION, AN INSPECTION OF THE REPAIR WILL BE REQUIRED IN ACCORDANCE WITH NOTES 1 AND 2 ABOVE.
- THE CONTRACTOR SHALL LEAVE ALL PIPE AND FITTINGS EXPOSED FOR THE INSPECTOR TO OBSERVE. INSPECTORS WILL NOT ENTER ANY EXCAVATIONS TO CHECK MATERIALS. THE TOP LAYER OF BEDDING CAN BE ADDED AFTER THE INSPECTION HAS BEEN COMPLETED.
- ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA STANDARDS.
- LOTS WITHOUT BUILDING ADDRESSES OR LOT AND BLOCK NUMBERS BEFORE DISTRICT INSPECTION OR METER SET WILL FAIL AUTOMATICALLY.
- CONTRACTOR MUST BE PRESENT AT TIME OF INSPECTION UNLESS COORDINATED WITH DISTRICT INSPECTOR.

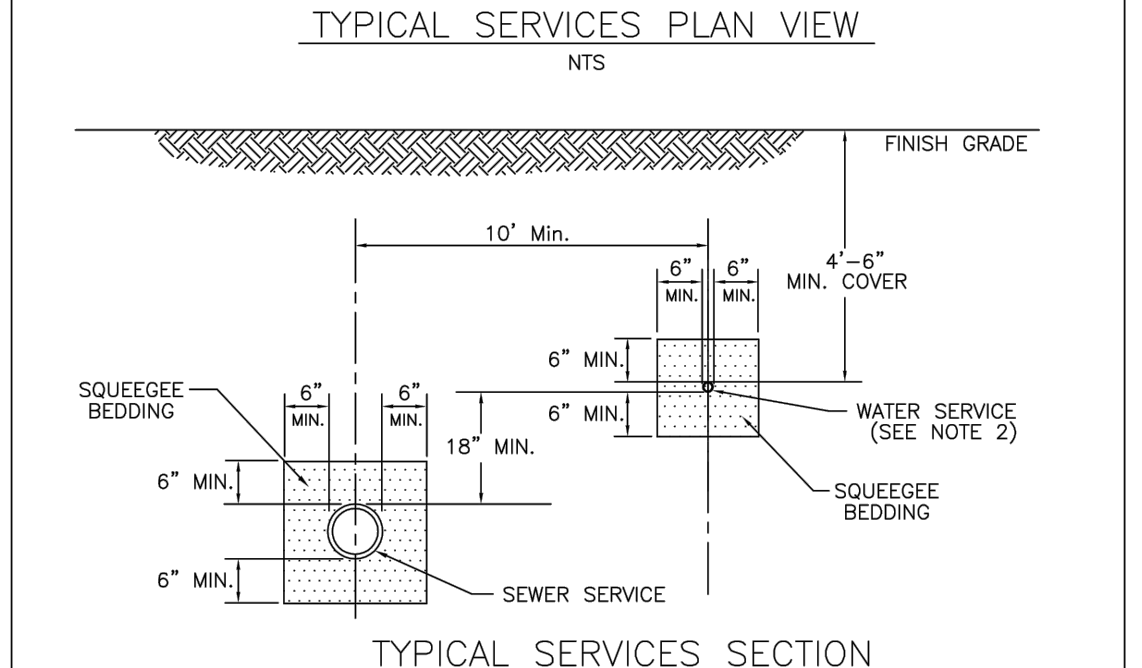
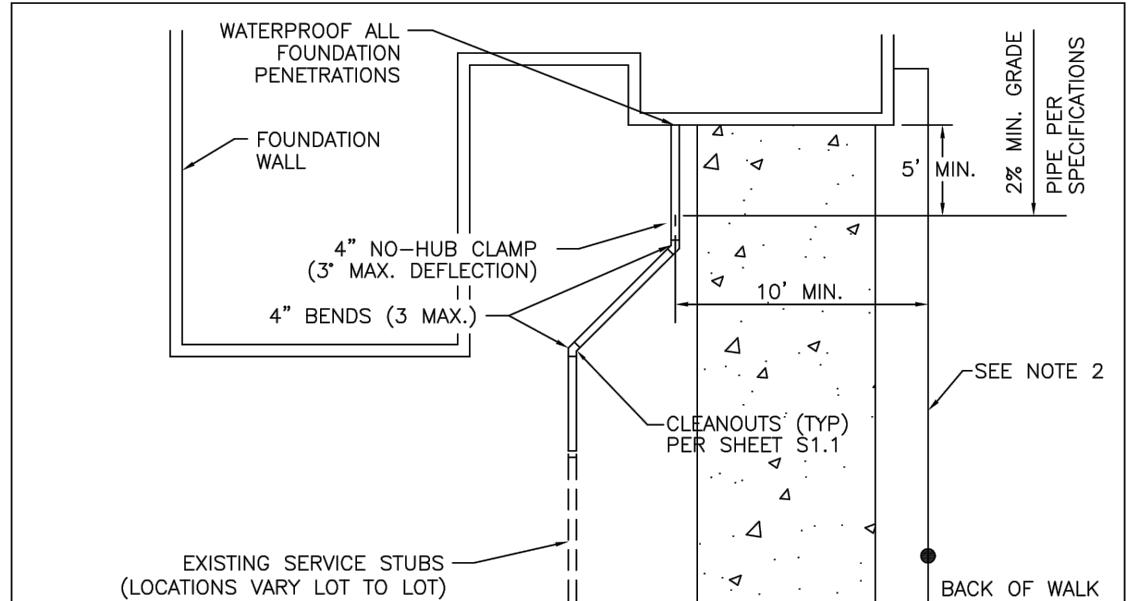
**INSTALLATION NOTES:**

**SEWER:**

- ACCEPTABLE PIPE MATERIALS ARE TO BE SDR 35 PVC PIPE, ABS PIPE AND PVC SCHD 40 PIPE. APPROVED BEDDING IS TO BE SQUEEGEE.
- NO-HUB CLAMPS SHALL BE USED TO JOIN 2 MALE PIPE ENDS WITH A MAXIMUM DEFLECTION OF 3".
- MINIMUM GRADE SHALL BE 2X.
- INSTALLATION SHALL INCLUDE NO MORE THAN 3 BENDS. 90° BENDS ARE NOT ALLOWED. SOLVENT WELDED PIPE WILL NOT BE ALLOWED.
- CLEAN-OUTS SHALL BE INSTALLED AT 100' INTERVALS AND EVERY CHANGE IN DIRECTION. CLEAN-OUTS ARE NOT REQUIRED FOR SERVICES LESS THAN 100' UNLESS THERE ARE CHANGES IN DIRECTION. PROVIDE DUAL CLEAN-OUT WITHIN 5 FEET OF FOUNDATION.
- STRESSING OF THE PIPE BETWEEN FITTINGS WILL NOT BE ALLOWED.
- SEWER SERVICE LINE SHALL NOT BE LOCATED UNDER CONCRETE SURFACE.
- ALL SERVICES WILL BE PERMANENTLY MARKED ON CURB FACE AS FOLLOWS:  
 "X" FOR SANITARY SEWER SERVICE  
 "W" FOR WATER SERVICES

PARKER WATER & SANITATION DISTRICT DISTRICT POLICIES & INSTALLATION NOTES FOR SEWER SERVICES			
SCALE:	NONE	DATE:	2/98
APPROVED:	PVR	01/02	10/16
		1/08	1/14
DIRECTOR OF ENGINEERING			

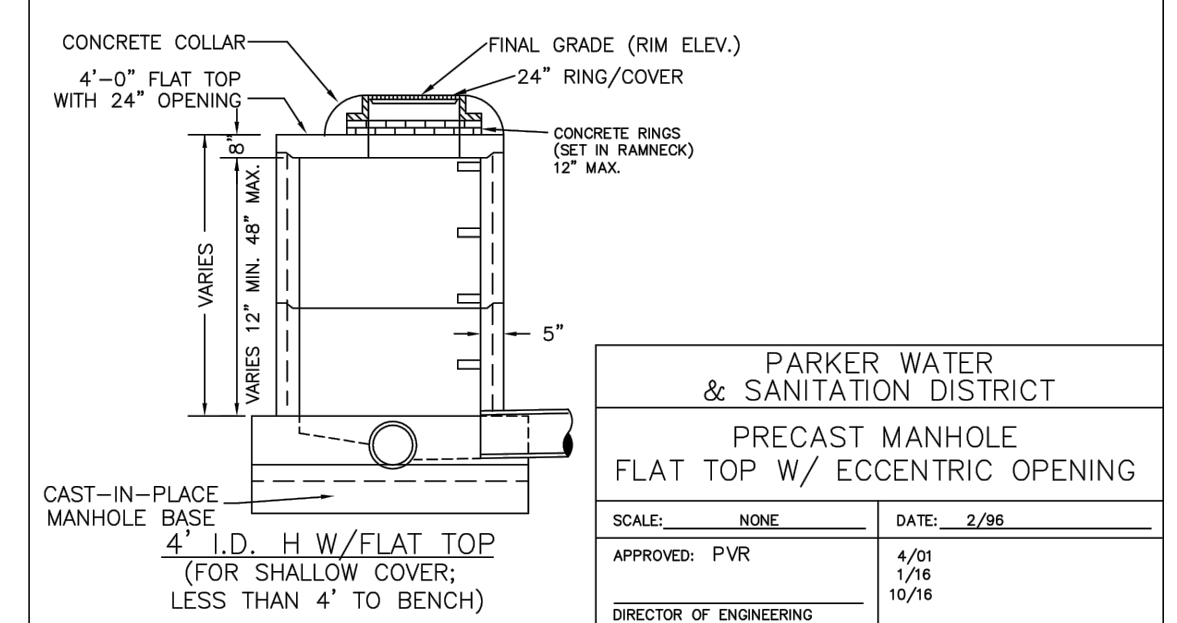
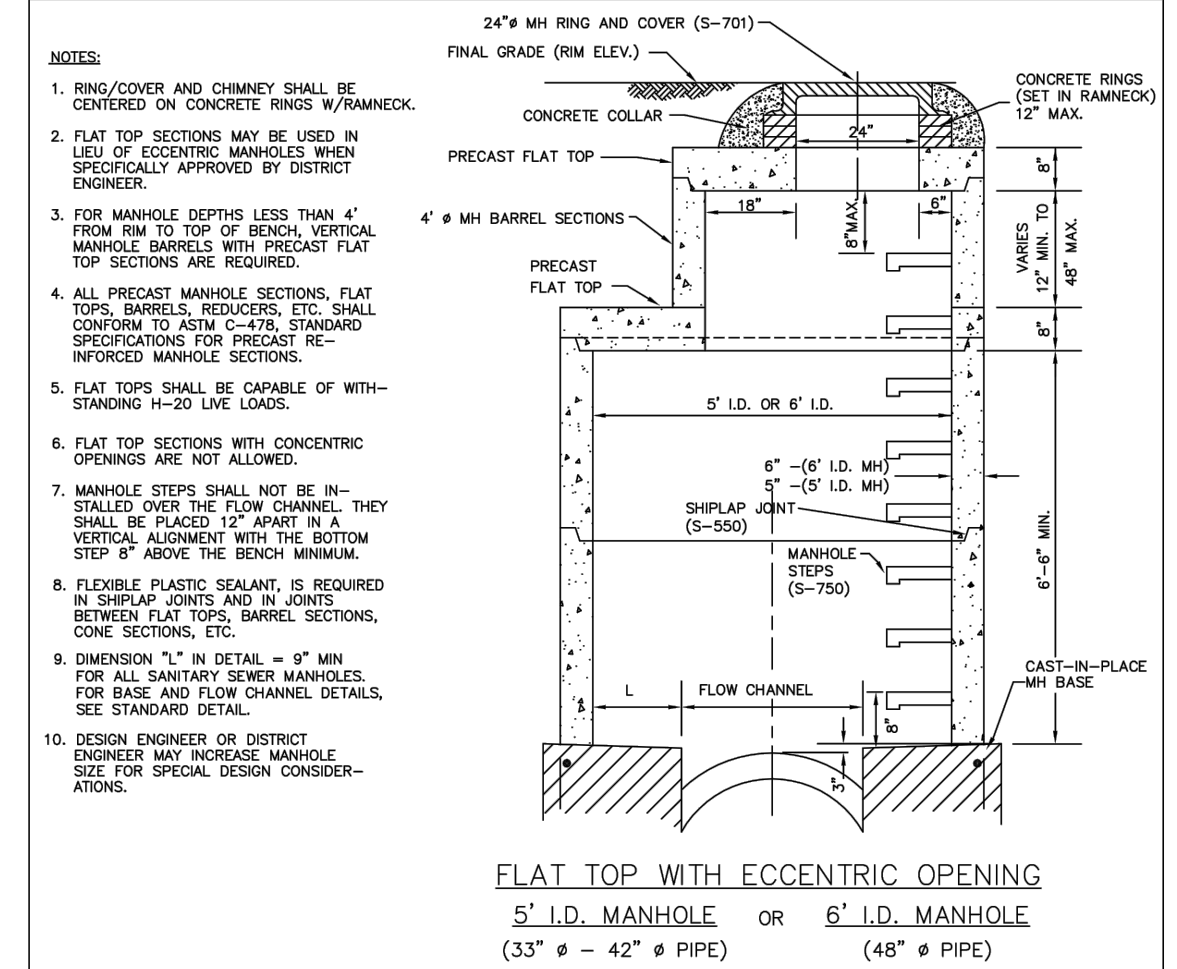
2016 REVISION SHEET S1.1



NOTE:  
 1. SEE SHEET S1.1 FOR DISTRICT POLICIES AND INSTALLATION NOTES.  
 2. TYPICAL WATER SERVICES SHOWN ON SHEET W1.2 IN WATER DETAILS.

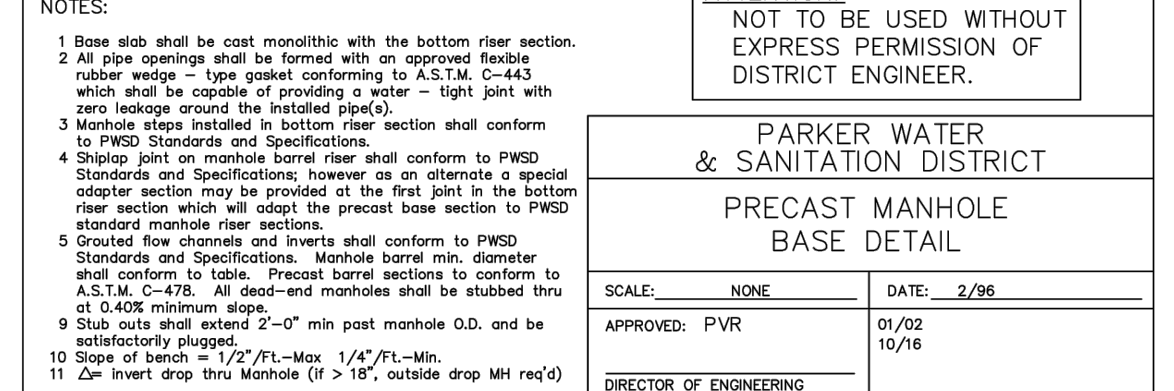
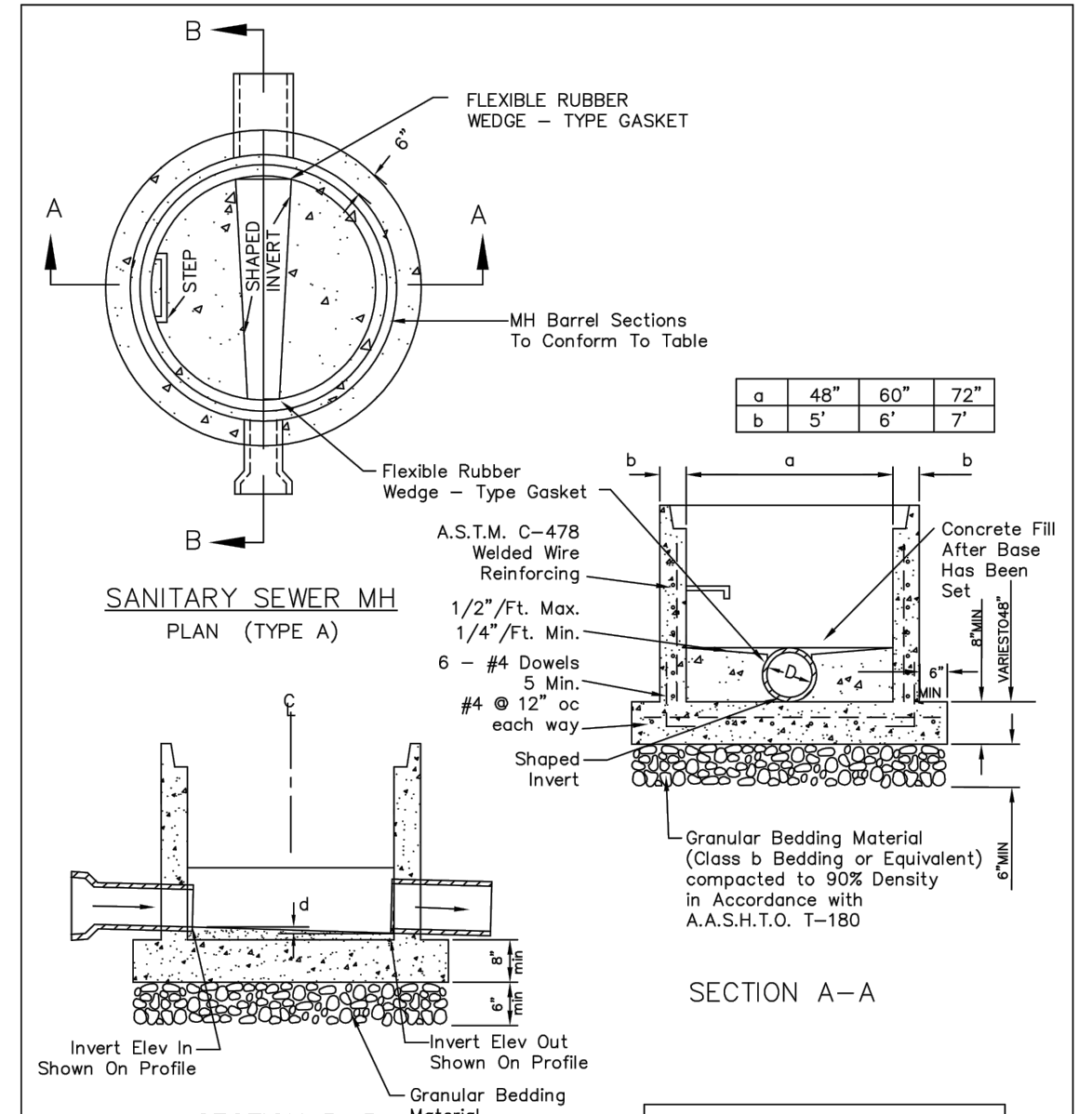
PARKER WATER & SANITATION DISTRICT TYPICAL SEWER SERVICES			
SCALE:	NONE	DATE:	2/98
APPROVED:	PVR	2/00	01/02
		01/08	10/16
DIRECTOR OF ENGINEERING			

2016 REVISION SHEET S1.2



PARKER WATER & SANITATION DISTRICT PRECAST MANHOLE FLAT TOP W/ ECCENTRIC OPENING			
SCALE:	NONE	DATE:	2/98
APPROVED:	PVR	4/01	1/16
		10/16	
DIRECTOR OF ENGINEERING			

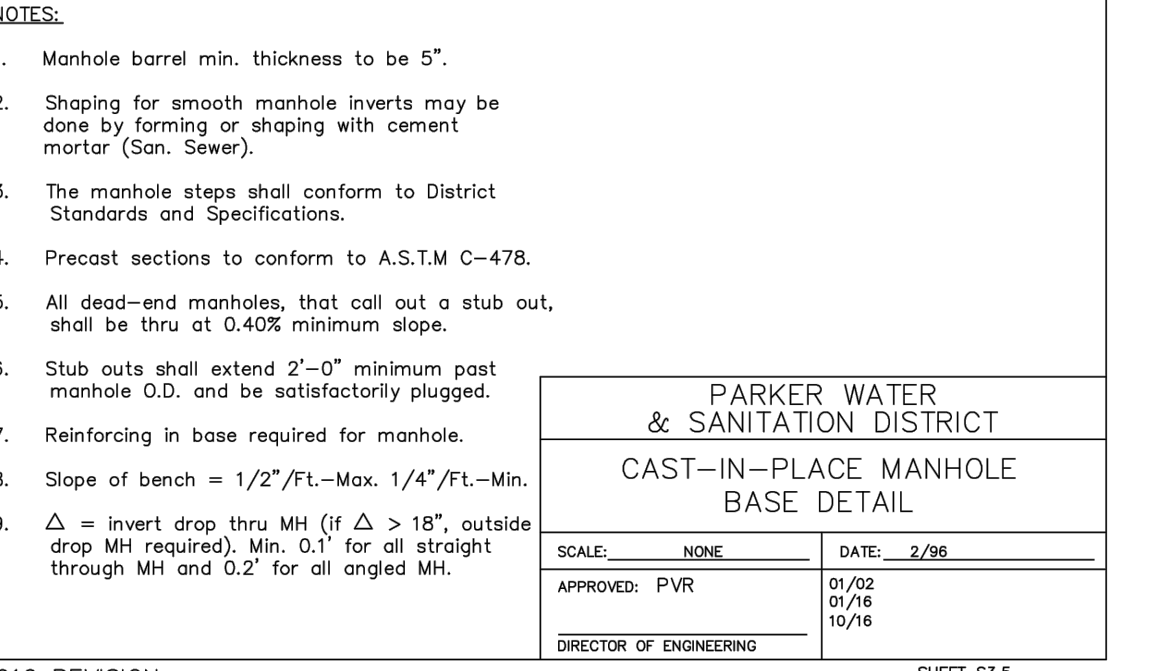
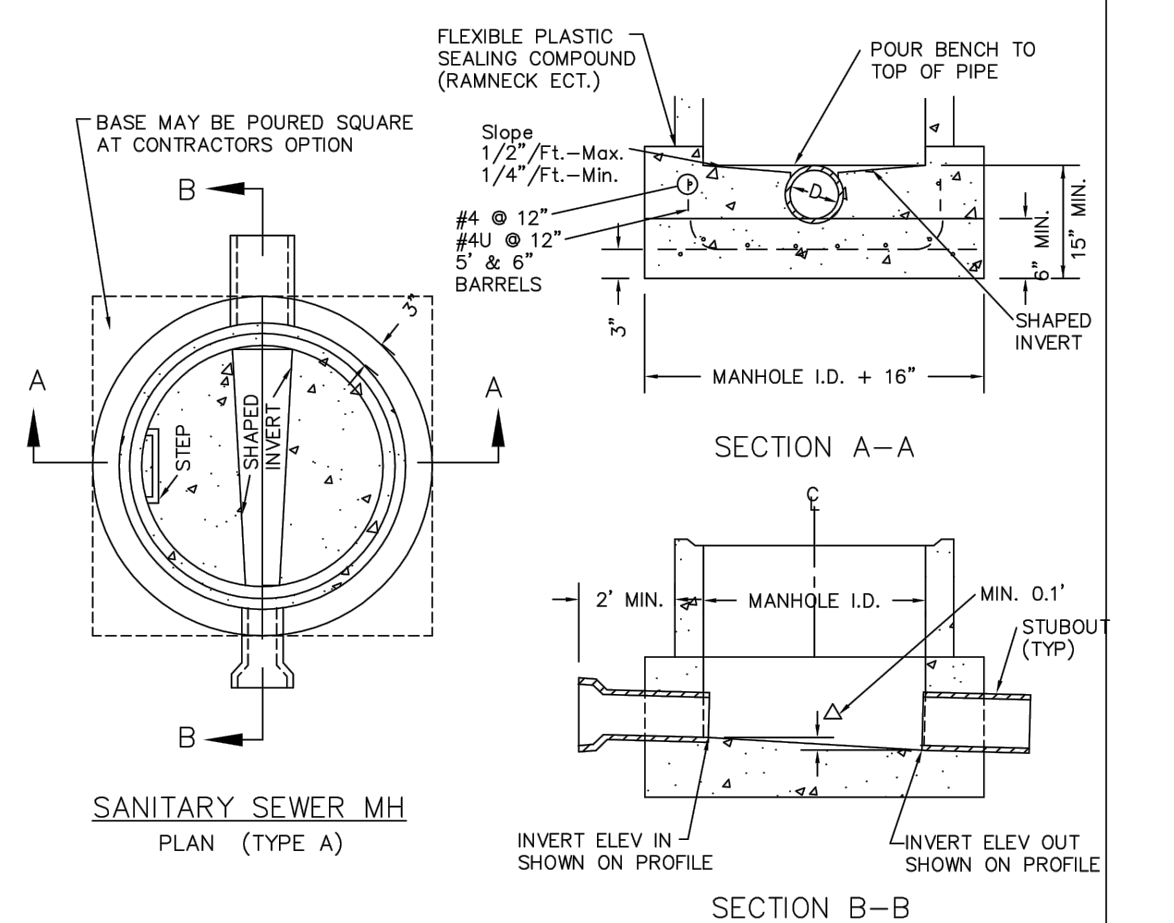
2016 REVISION SHEET S3.2



ATTENTION:  
 NOT TO BE USED WITHOUT EXPRESS PERMISSION OF DISTRICT ENGINEER.

PARKER WATER & SANITATION DISTRICT PRECAST MANHOLE BASE DETAIL			
SCALE:	NONE	DATE:	2/98
APPROVED:	PVR	01/02	10/16
DIRECTOR OF ENGINEERING			

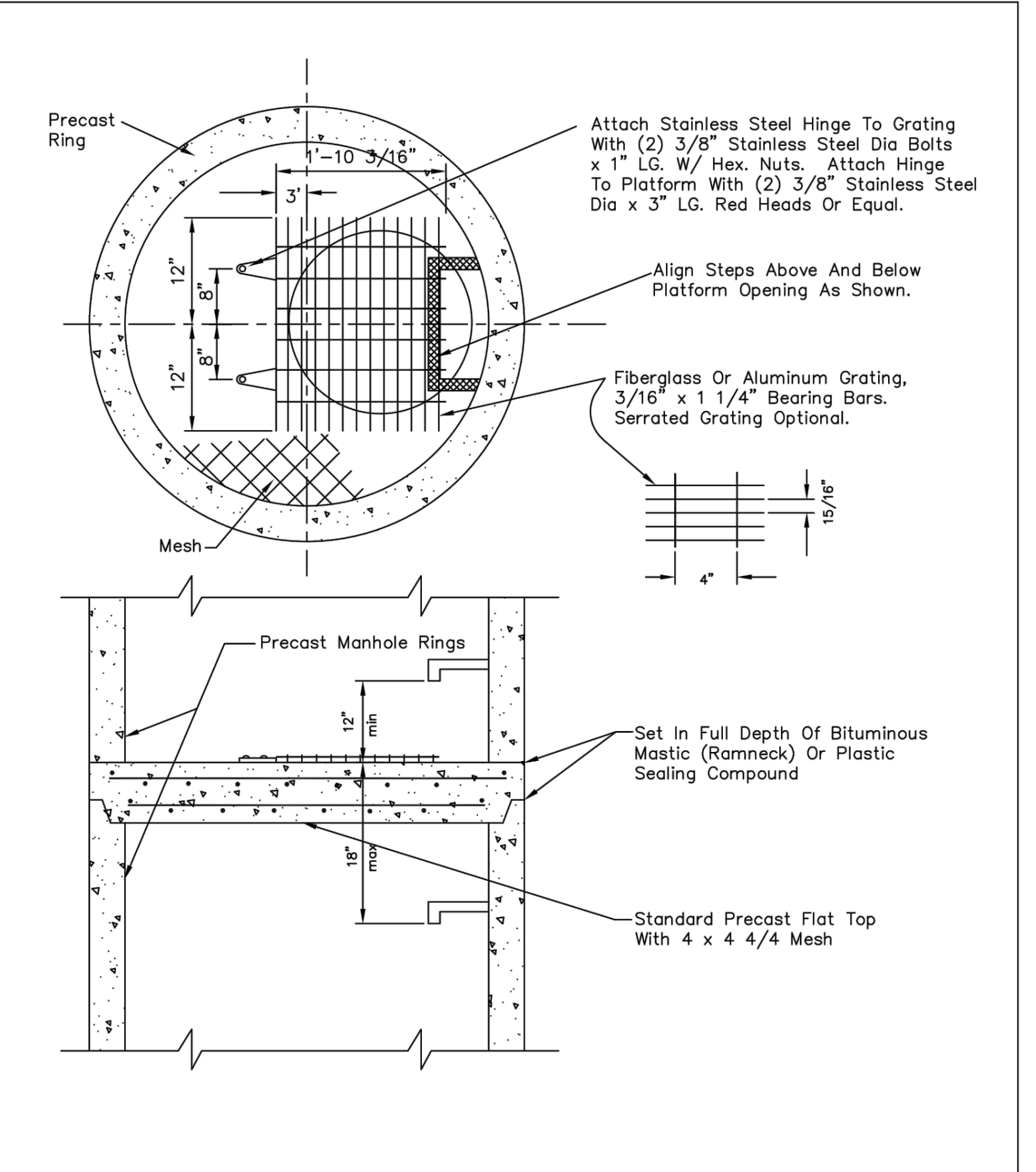
2016 REVISION SHEET S3.4



NOTES:  
 1. Manhole barrel min. thickness to be 5".  
 2. Shaping for smooth manhole inverts may be done by forming or slapping with cement mortar (San. Sewer).  
 3. The manhole steps shall conform to District Standards and Specifications.  
 4. Precast sections to conform to A.S.T.M. C-478.  
 5. All dead-end manholes, that call out a stub out, shall be thru at 0.40% minimum slope.  
 6. Stub outs shall extend 2'-0" minimum past manhole O.D. and be satisfactorily plugged.  
 7. Reinforcing in base required for manhole.  
 8. Slope of bench = 1/2" / FT. - Max. 1/4" / FT. - Min.  
 9. Δ = invert drop thru MH (if Δ > 18", outside drop MH required). Min. 0.1' for all straight through MH and 0.2' for all angled MH.

PARKER WATER & SANITATION DISTRICT CAST-IN-PLACE MANHOLE BASE DETAIL			
SCALE:	NONE	DATE:	2/98
APPROVED:	PVR	01/02	01/16
		10/16	
DIRECTOR OF ENGINEERING			

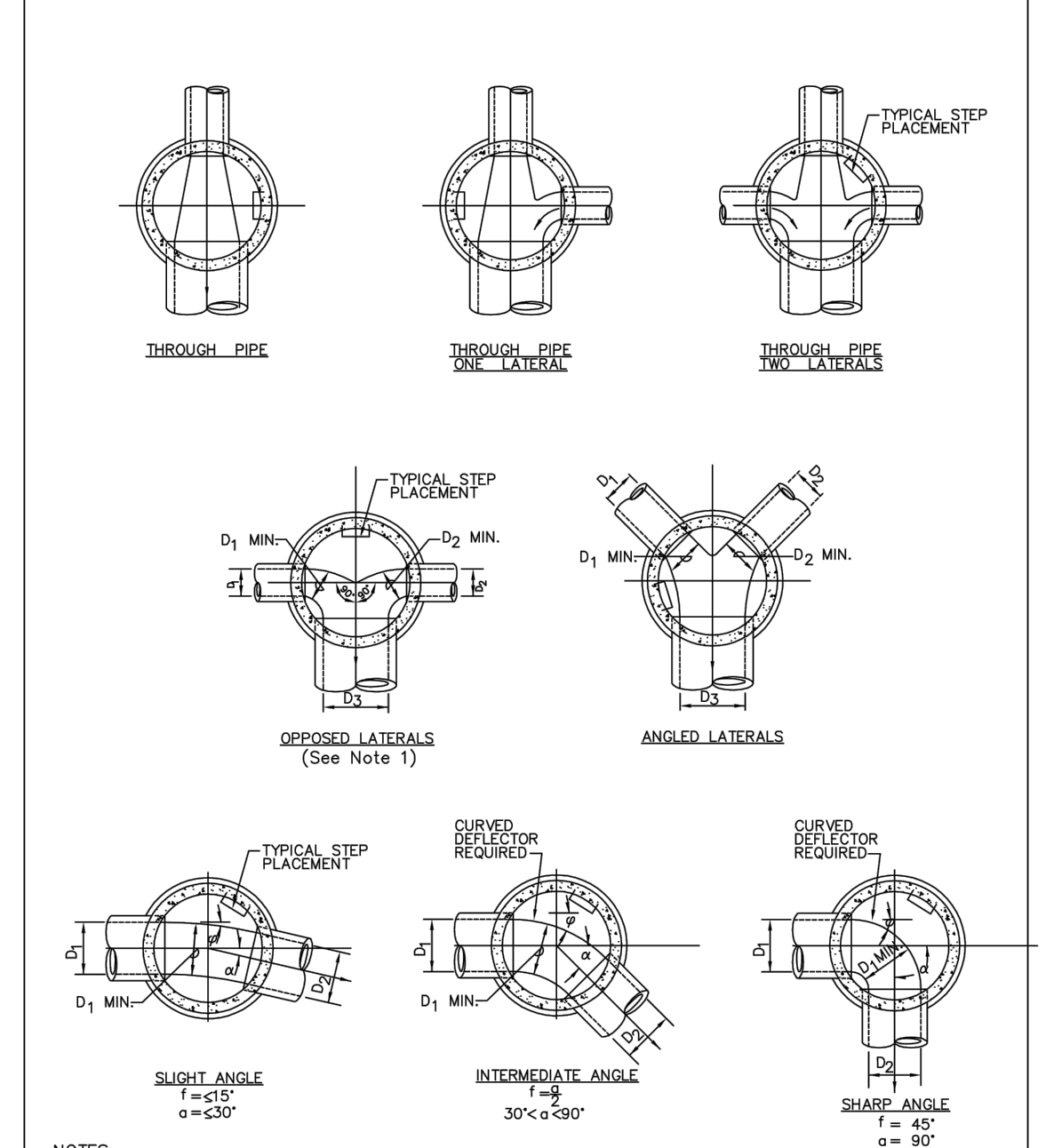
2016 REVISION SHEET S3.5



NOTES:  
 1.1 Maximum distance between platforms shall be 15' vertically.  
 1.2 All hardware used inside a manhole shall be stainless steel.  
 1.3 Manholes over 20' deep shall submit structural calculations on base and wall slippage.

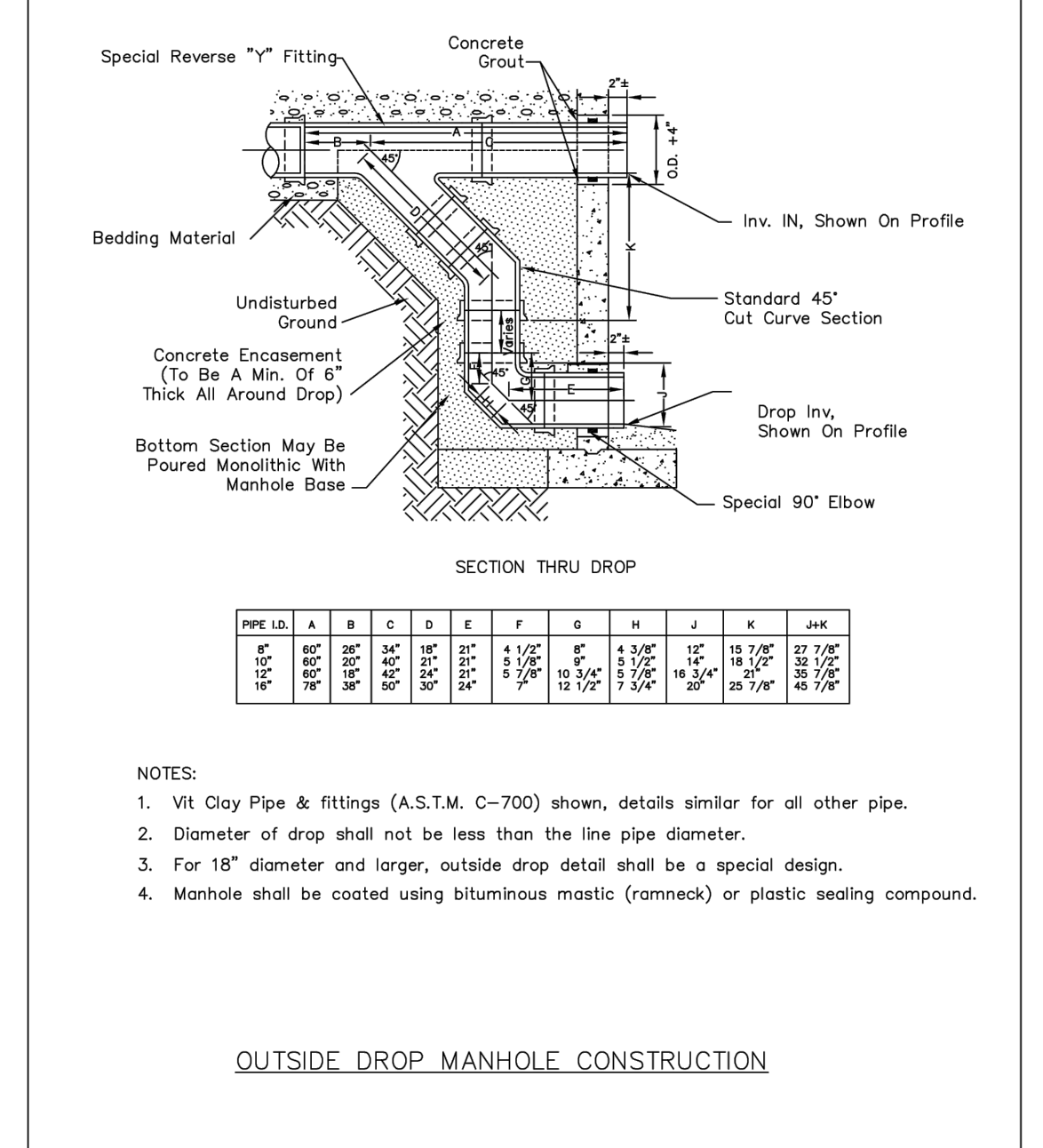
PARKER WATER & SANITATION DISTRICT INTERMEDIATE PLATFORM FOR MANHOLES OVER 20' DEPTH			
SCALE:	NONE	DATE:	2/98
APPROVED:	RWT	2/00	4/19
		1/16	10/16
DIRECTOR OF ENGINEERING			

2020 REVISION SHEET S3.6



PARKER WATER & SANITATION DISTRICT TYPICAL BASE CHANNELIZATION DETAILS			
SCALE:	NONE	DATE:	2/98
APPROVED:	PVR	01/16	10/16
DIRECTOR OF ENGINEERING			

2016 REVISION SHEET S3.7



PARKER WATER & SANITATION DISTRICT OUTSIDE DROP MANHOLE CONSTRUCTION			
SCALE:	NONE	DATE:	2/98
APPROVED:	PVR	01/16	10/16
DIRECTOR OF ENGINEERING			

2016 REVISION SHEET S3.8

**APPROVED**  
 Oct 08 2020  
**PARKER WATER AND SANITATION DISTRICT**

NO.	REVISION	BY	DATE

**Kimley»Horn**  
 2020 KIMLEY-HORN AND ASSOCIATES, INC.  
 4582 South Ulster Street, Suite 1500  
 Denver, Colorado 80237 (303) 228-2300

DESIGNED BY: DLS  
 DRAWN BY: JRK  
 CHECKED BY: DLS  
 DATE: 10/07/20

PARKER AND PINE FILING 1  
 PARKER, CO  
 CONSTRUCTION DOCUMENTS  
 UTILITY DETAILS



PROJECT NO.  
 096502001  
 DRAWING NAME  
 096502001UT-DT  
**C7.9**

C:\Users\josh.kasper\Documents\Projects\2016\09550201UT-DT.dwg Kasper, Josh 10/10/2016 10:57 AM  
 This document was created using AutoCAD 2016. The design was created using AutoCAD 2016. The design was created using AutoCAD 2016.

Lower limit of sloping or benching of trench walls

Plain or Reinforced Concrete Continuous  $f_c = 3500$  psi min.

Densely compacted backfill hand tamped (90% density, AASHTO T-193) in open areas and 95% density, AASHTO T-99 in all public R.O.W.

Compacted Granular Material (Class "B" Bedding)

$B_c$  = Pipe O.D.

$B_d$  = Specified Trench Width

$B_w$  = Cradle Width

CONCRETE ARCH

CONCRETE CRADLE CLASS "A" BEDDING

NOTE: The Design Engineer shall be responsible for structural design of the concrete cradle and/or concrete arch.

NOMINAL DIAMETER (D)	MINIMUM THICKNESS (t)	MIN. WIDTH OF CRADLE ( $B_w$ )
18" & smaller	6"	$B_c + 8"$
21" to 24"	6"	$B_c + 8"$
27" to 33"	8"	$B_c + 8"$
36" to 42"	10"	$1.25 B_c$
48" & larger	1/4 D	$1.25 B_c$

PARKER WATER & SANITATION DISTRICT  
TRENCHING AND BEDDING DETAIL - CLASS "A"

SCALE: NONE DATE: 2/98

APPROVED: PVR 1/16 10/16

DIRECTOR OF ENGINEERING

2016 REVISION SHEET 54.2

**APPROVED**  
**Oct 08 2020**  
**PARKER WATER AND SANITATION DISTRICT**

WATERTIGHT/AIRTIGHT MECHANICAL SEAL OR NON SHRINK GROUT W/ WATER STOP

PROPOSED SANITARY SEWER

EXISTING SANITARY SEWER

STEPS

NEW MANHOLE BENCHING SHALL BE TO CROWN OF NEW PIPE SLOPE BENCHING NOT LESS THAN 1/2" PER FOOT OR MORE THAN 1-1/2" PER FOOT (SEE ALSO NOTE 1)

DRILL EXISTING BENCH AND SET REBAR IN EPOXY.

CUT WITH CORE DRILL PIPE SIZE + 4" (MIN)

EXISTING BENCHING SHALL BE THOROUGHLY CLEANED PRIOR TO POURING NEW BENCHING

MANHOLE INVERT TIE-IN

NOTES:  
1 - NEW BENCH SHALL INCLUDE REINFORCEMENT TO CONTROL CONCRETE CRACKING.

PARKER WATER & SANITATION DISTRICT  
MANHOLE INVERT TIE-IN DETAIL

SCALE: NONE DATE: 2/98

APPROVED: PVR 1/16 10/16

DIRECTOR OF ENGINEERING

2016 REVISION SHEET 54.9

FRAME

SECTION ON CENTER OF FRAME

COVER

SECTION OF COVER

SECTION B-B

SECTION C-C

SECTION A-A

IN-LINE CLEANOUT SECTIONS

NOTE: THE WORD "SEWER" TO BE RAISED 3/16"

PARKER WATER & SANITATION DISTRICT  
IN-LINE CLEANOUT SECTIONS

SCALE: NONE DATE: 2/98

APPROVED: PVR 2/09 1/16 10/16

DIRECTOR OF ENGINEERING

2016 REVISION SHEET 54.12

WYE

SECTION A - A

NOTE: TAPS IN STAGGERED CONFIGURATION AT 10 O'CLOCK AND 2 O'CLOCK

DOMESTIC SEWER TAPPING DETAIL

Sewer service connections shall be positioned at either the 2 o'clock or the 10 o'clock position on the circumference of the sewer main. On new installations, tee or wye fittings shall be used. When tapping into existing sewer main, a saddle connection and approved coring method shall be used. The minimum distance between service connections made along the pipe shall be 3 feet. The minimum distance from either the bell or spigot end of a pipe shall be 3 feet. The minimum distance from the center of a manhole to a service connection shall be either 7 feet or the transition point from the manhole trench to the normal pipe trench, whichever is greater. A maximum of 4 sewer service connections shall be allowed per 20 foot length of pipe. In all cases, a specific soils investigation should be conducted to assure that the external loading will be within allowable limits regardless of the number of taps involved.

PARKER WATER & SANITATION DISTRICT  
DOMESTIC SEWER TAPPING DETAIL

SCALE: NONE DATE: 2/98

APPROVED: PVR 4/01 1/08 1/16 10/16

DIRECTOR OF ENGINEERING

2016 REVISION SHEET 54.13

RAISED LETTERS

SEWER

HALF PLAN

STANDARD LIFTING SLOT DETAIL

MACHINED SEAT

PARKER WATER & SANITATION DISTRICT  
24" DIAMETER RING AND COVER

NOTE:  
1. Casting Specifications: ASTM A-48 With A Minimum Tensile Strength of 25 KSI (Class 25)  
2. All Casting To Be Dipped in Asphalt Base Point (Or Approved Equal)  
3. No other manhole lids will be accepted without prior approval from the District Engineer.

SCALE: NONE DATE: 2/98

APPROVED: PVR 10/16 10/16

DIRECTOR OF ENGINEERING

2016 REVISION SHEET 53.9

ALUMINUM STEP

CONCRETE WALL SECTION

STEPS TO BE HOOKED BEHIND REINFORCING WHEN CONCRETE SECTIONS ARE CAST.

VERTICAL SPACING 12" MIN. 16" MAX. WITH BOTTOM STEP 6"-8" ABOVE BENCH

REINFORCING

TYPICAL INSTALLATION

TOE POCKET DETAILS

STANDARD EXTRUDED ALUMINUM MANHOLE STEP

ALUMINUM STEP

PARKER WATER & SANITATION DISTRICT  
STANDARD EXTRUDED ALUMINUM MANHOLE STEP

SCALE: NONE DATE: 2/98

APPROVED: PVR 01/16 10/16

DIRECTOR OF ENGINEERING

2016 REVISION SHEET 53.10

Lower limit of sloping or benching of trench walls

Bedding Spigots to be placed in 8" loose fits and fully compacted by hand tamping, or by approved backfill, to 95% density, AASHTO T-193 in open areas and 95% density, AASHTO T-99 in all public R.O.W.

Original Ground Surface of Final Grate Elevation

max. limits of excavation

Bedding Trench (Vertical walls, broomed or shored if necessary to meet safety requirements)

NOTE: If soil shearing or shoring is used, it shall be cut off at top of pipe and left in place.

$B_c$  = Pipe O.D.  
 $R_g$  = Specified Trench Width

NOTES:  
1. Sloping or benching of trench side walls, where permitted shall be in accordance with applicable Federal, State and local safety regulations.  
2. Trench shall be broomed and shored as necessary to afford safe working conditions or to protect adjacent utilities, structures, etc. Unless otherwise specified on the plans, no payment will be made for removal, replacement or relocation of curb and gutters, sidewalks, structures, etc. outside the maximum limits of excavation as shown and the contractor shall be responsible for protection thereon.  
3. If excavation is 5' or 6', then existing asphalt pavement shall be removed and replaced up to the surface. Minimum support pay width,  $B_c$  &  $B_d$  shall then be based upon this actual width.

STREET WIDTH	ASPHALT BASE COURSE (A)	ASPHALT WEARING SURFACE (W)	TOTAL THICKNESS (T)
UP TO 36'	4"	2"	6"
36' TO 44'	4"	3"	7"
44' TO 48'	5"	3"	8"
WIDER THAN 48'	6"	3"	9"

PARKER WATER & SANITATION DISTRICT  
SEWER TRENCHING AND BEDDING DETAIL

SCALE: NONE DATE: 2/98

APPROVED: PVR 5/98 1/16 10/16

DIRECTOR OF ENGINEERING

2016 REVISION SHEET 54.1

SADDLE CONNECTION

SIDE VIEW

SECTION QUADRANT 1 SHOWN

STRAP GUIDES

RUBBER GASKET

PIPE WALL

PIPE JOINT (W/ ELASTOMERIC SEAL)

STAINLESS STEEL STRAP TO BE PLACED AT RIGHT ANGLES TO PIPE SURFACE (5 FT-LBS TORQUE)

BEVEL THIS SIDE OF HOLE IN PIPE AT 45° ANGLE SO THAT SADDLE STEM WILL FIT PROPERLY

Y - SADDLE DETAIL

NOTES:  
1. SADDLE FITTINGS TO BE PER ASTM D3034.  
2. CONNECTION SHALL BE Y - SADDLE WITH TWO BONDS

PARKER WATER & SANITATION DISTRICT  
P.V.C. SADDLE CONNECTION DETAIL

SCALE: NONE DATE: 2/98

APPROVED: PVR 1/16 10/16

DIRECTOR OF ENGINEERING

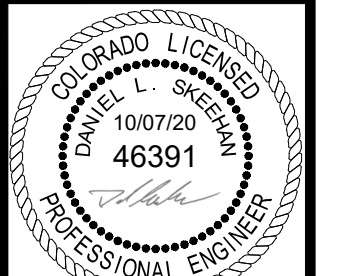
2016 REVISION SHEET 54.14

NO.	REVISION	BY	DATE	APPR

**Kimley»Horn**  
 2020 KIMLEY-HORN AND ASSOCIATES, INC.  
 4582 South Ulster Street, Suite 1500  
 Denver, Colorado 80237 (303) 228-2300

DESIGNED BY: DLS  
 DRAWN BY: JRK  
 CHECKED BY: DLS  
 DATE: 10/07/20

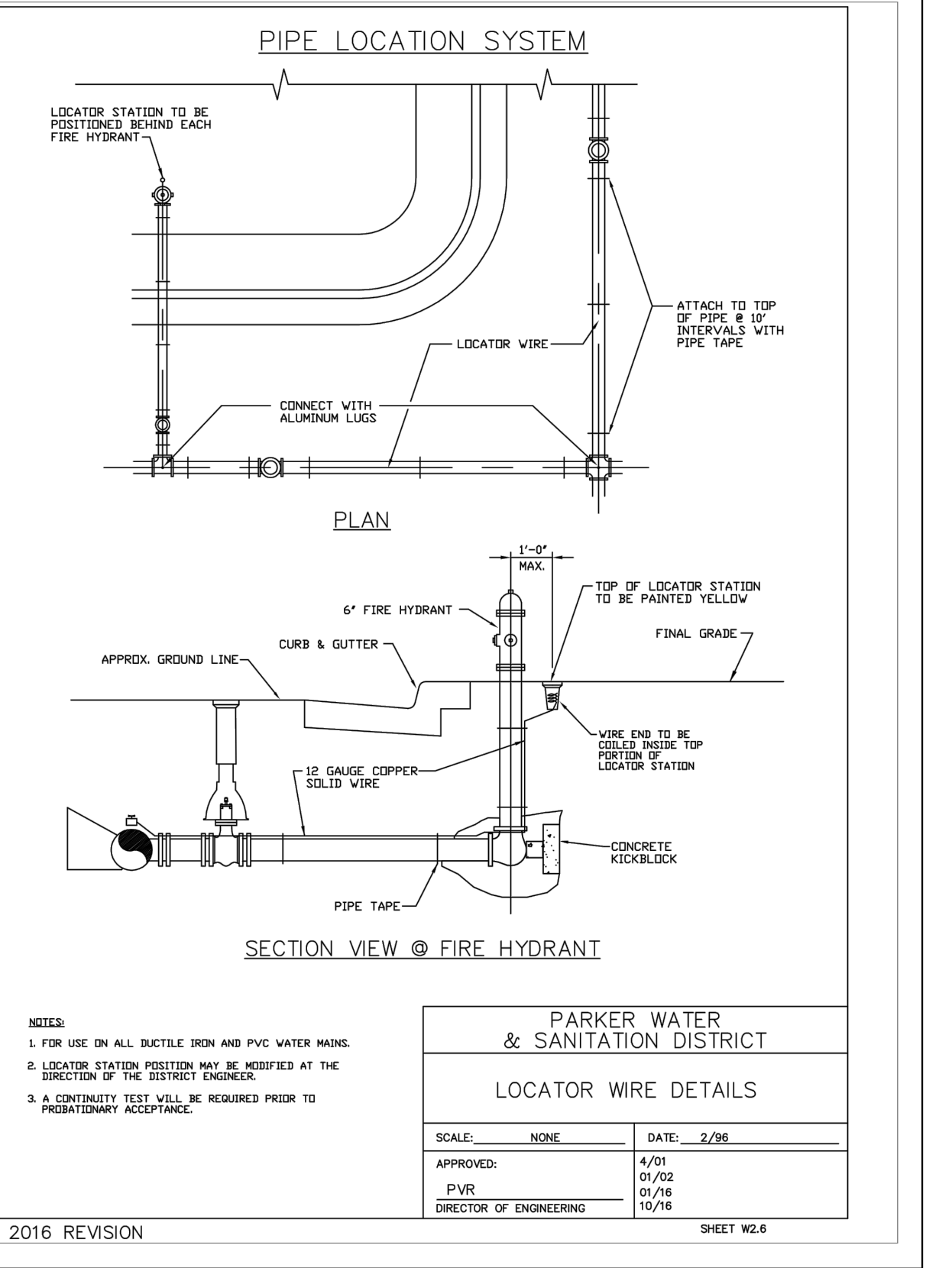
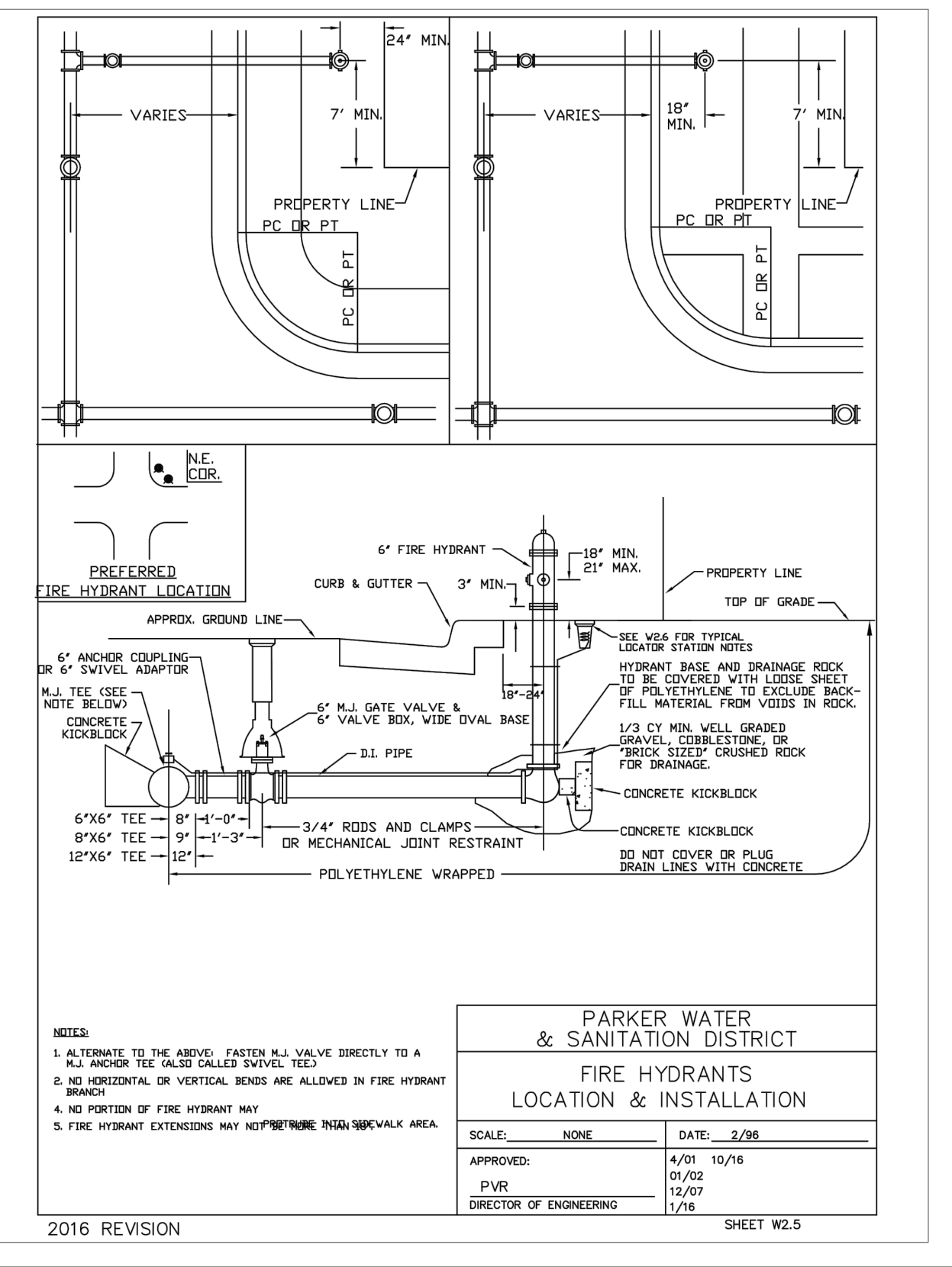
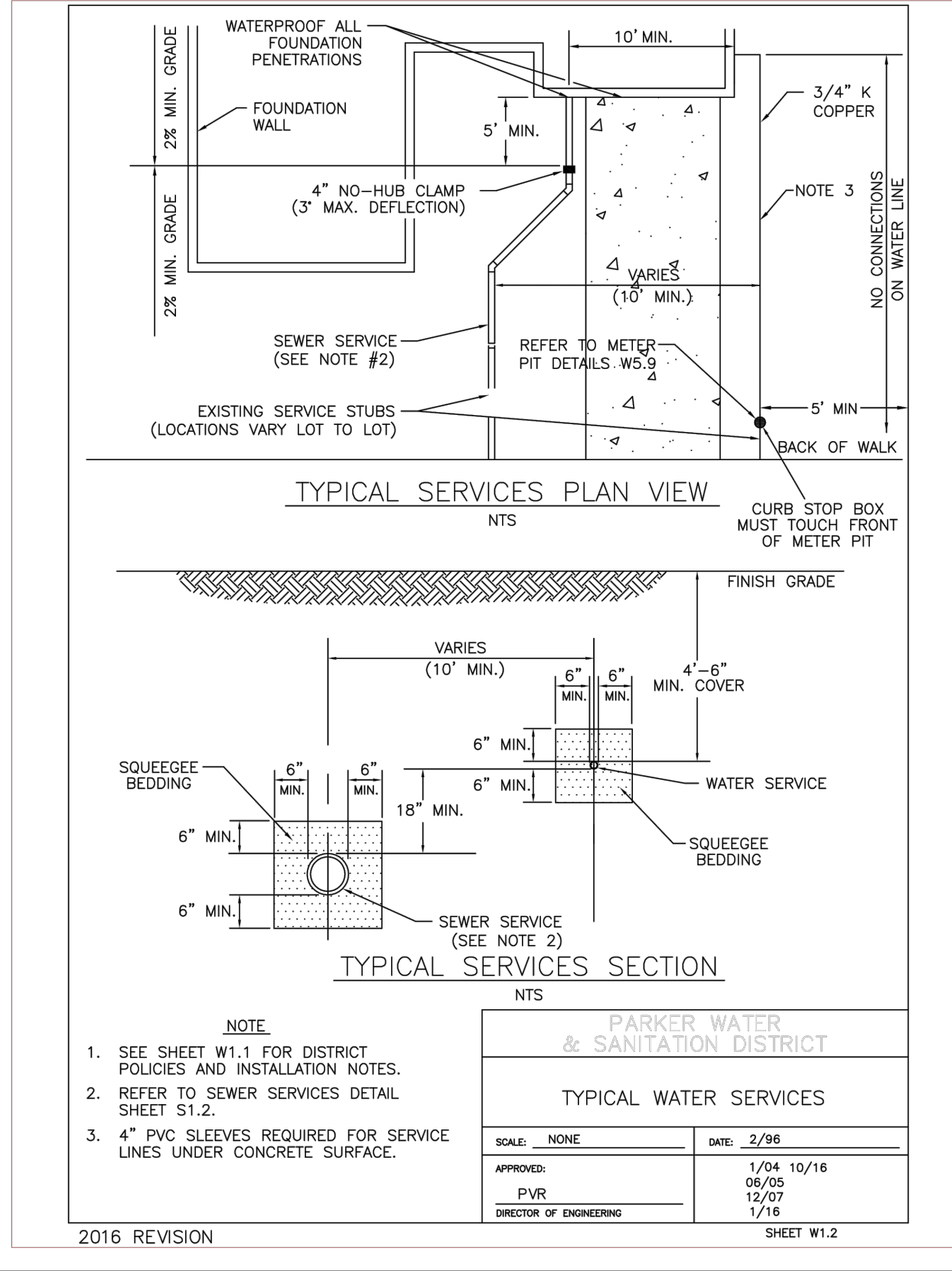
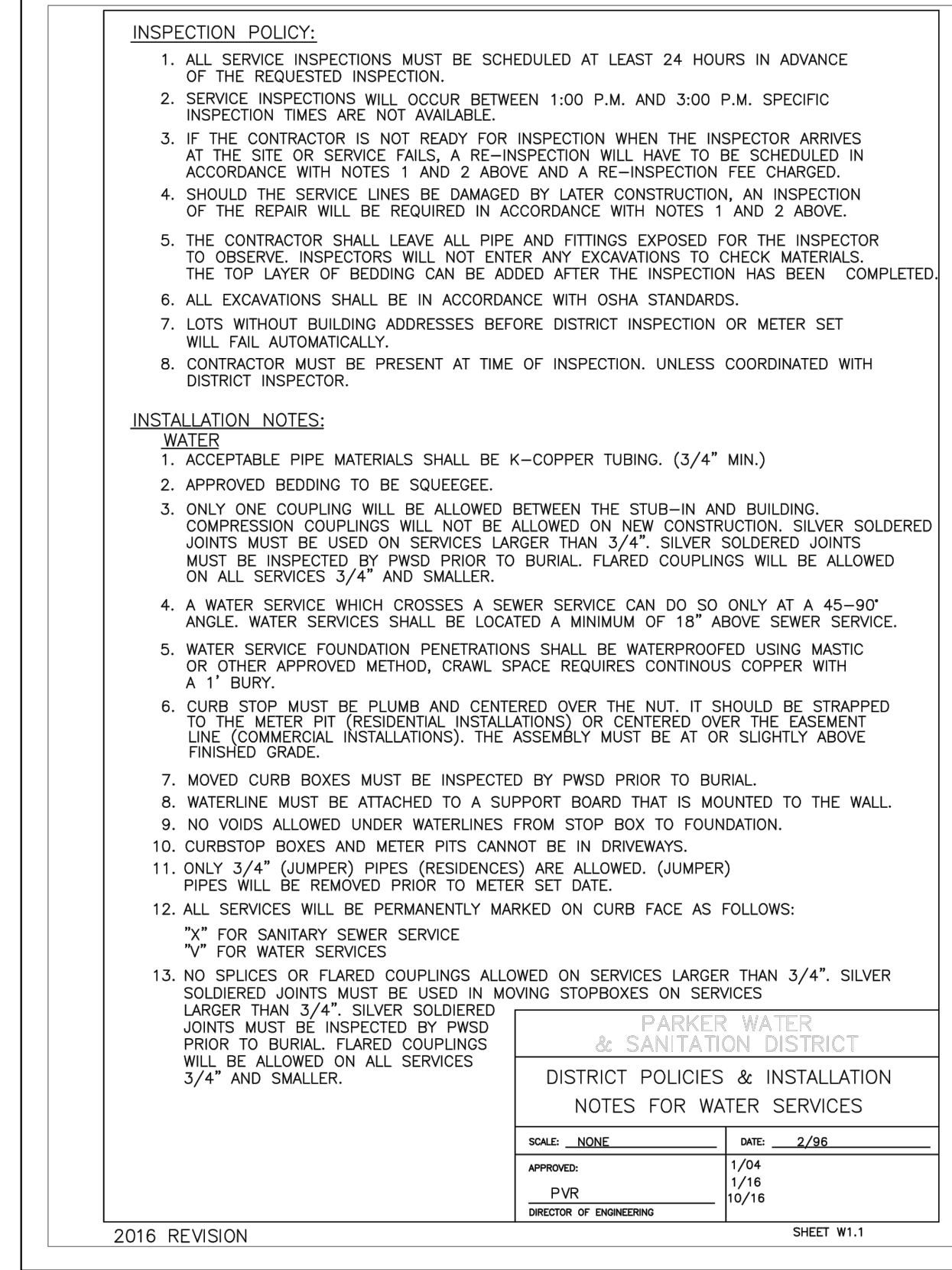
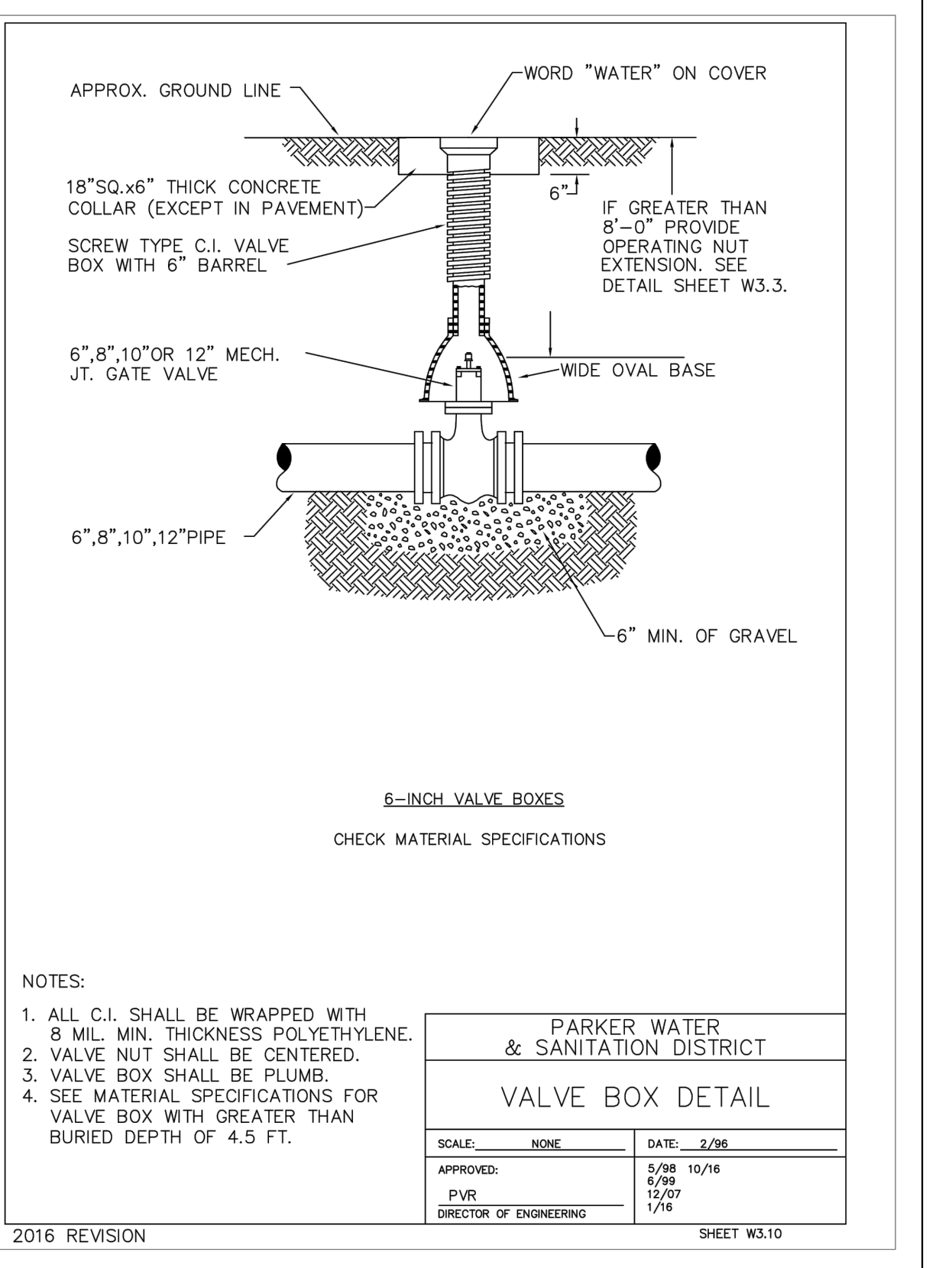
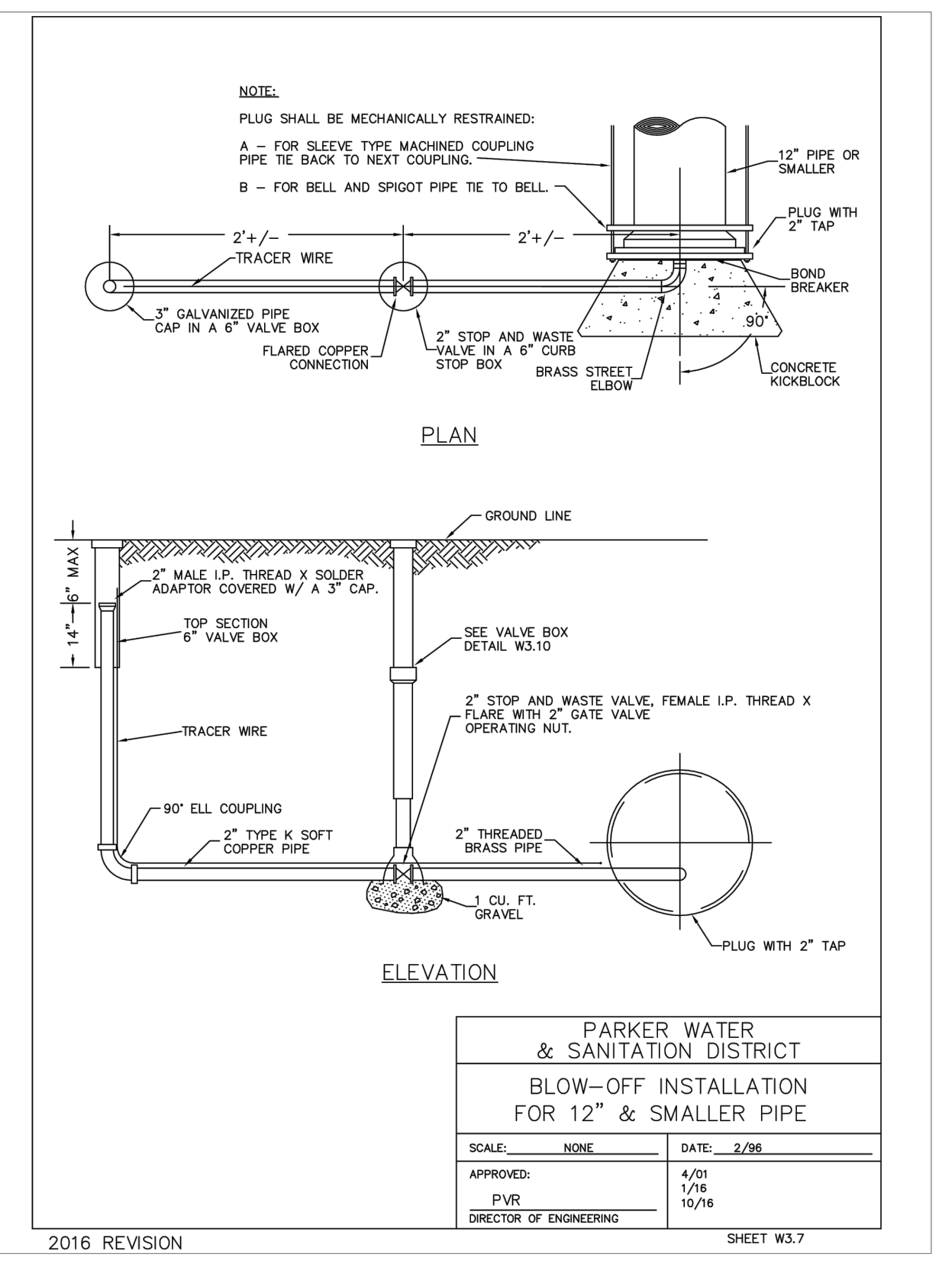
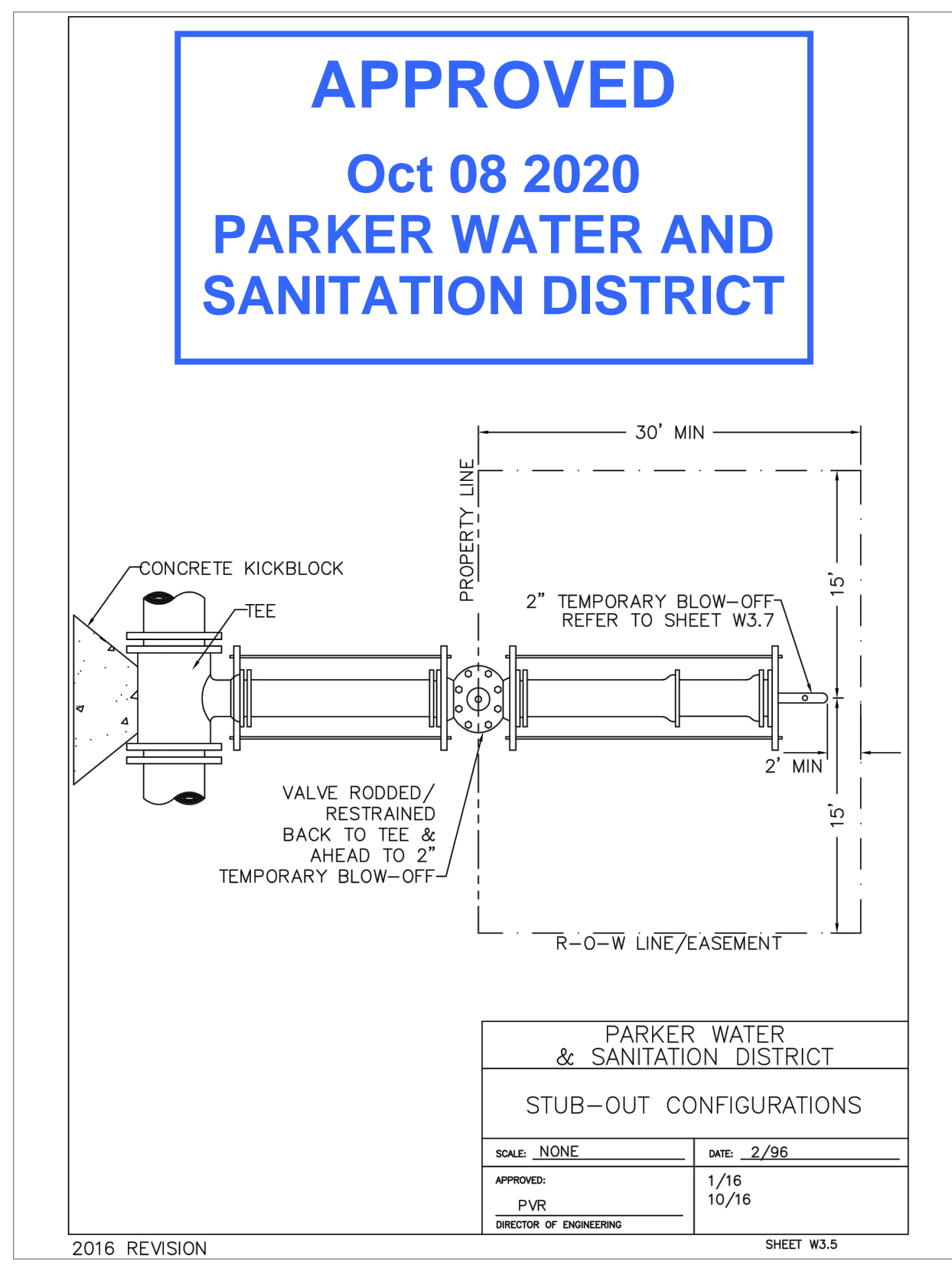
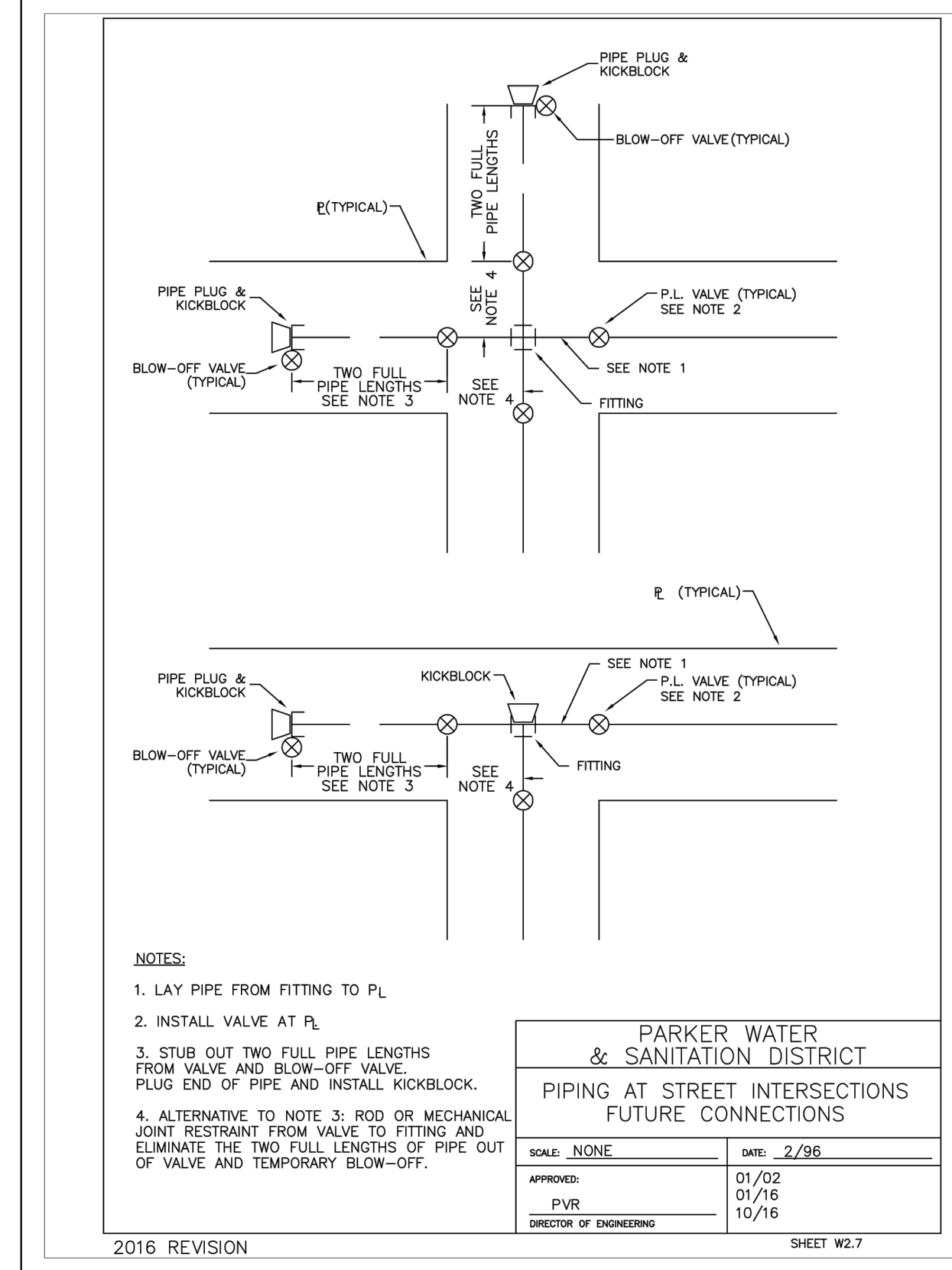
PARKER AND PINE FILING 1  
 PARKER, CO  
 CONSTRUCTION DOCUMENTS  
 UTILITY DETAILS



PROJECT NO.  
 096502001  
 DRAWING NAME  
 096502001UT-DT

C701.10

C:\Users\josh.kimley\Documents\Projects\2016\096502001\DWG\K0602001.dwg K0602001 - Job: 10/07/2016 10:57 AM  
 This document is the property of Kimley-Horn and Associates, Inc. and is not to be distributed, copied, or reproduced in any form without the written consent of Kimley-Horn and Associates, Inc.



NO.	REVISION	BY	DATE

**Kimley»Horn**  
 2020 KIMLEY-HORN AND ASSOCIATES, INC.  
 4582 South Ulster Street, Suite 1500  
 Denver, Colorado 80237 (303) 228-2300

DESIGNED BY: DLS  
 DRAWN BY: JRK  
 CHECKED BY: DLS  
 DATE: 10/07/20

PARKER AND PINE FILING 1  
 PARKER, CO  
 CONSTRUCTION DOCUMENTS  
 UTILITY DETAILS



PROJECT NO.  
 096502001  
 DRAWING NAME  
 096502001UT-DT  
 C7.11

**APPROVED**  
**Oct 08 2020**  
**PARKER WATER AND**  
**SANITATION DISTRICT**

**CLAMP DETAILS**

**DIMENSIONS**

PIPE DIA.	BAR SIZE	A	B	C	D	E	F	BOLT SIZES	PIPE DIA.						
4	1-1/2	9-3/4	7-1/2	3-1/2	1	1	6-3/4	4-7/8	2-3/4	1-1/4	1-1/4	3x1/2	2-1/2	3/8	4
6	2x1/2	13	9-1/2	4-1/2	2	2	10-3/4	7-7/8	4-1/8	1-5/8	1-1/4	3-7/8	3-1/2	3/4	6
8	2-1/2	15	13-3/4	4-3/4	4-1/2	3-1/4	1-1/2	13-1/4	8-1/4	1-5/8	1-1/4	4-1/2	4-1/2	3/4	8
12	2-1/2	17-1/2	16-3/8	4-5/8	4-3/4	1	1-1/4	14-1/2	13-1/2	1-5/8	1-1/2	4-1/2	4-1/2	3/4	12
16	3x3/4	24-1/2	21-7/8	4-1/2	4-3/4	1-1/2	1-1/2	19-3/4	17-1/2	1-5/8	1-1/2	5-1/2	5-1/2	3/4	16
20	3x3/4	30-1/2	25-3/8	4-1/2	4-3/4	1-1/2	1-1/2	24-3/4	21-3/4	1-5/8	1-1/2	5-1/2	5-1/2	3/4	20
24															24

NOTE: ALL DIMENSIONS IN INCHES  
 CLAMPS MAY NOT BE USED ON PVC PIPE.

**PARKER WATER & SANITATION DISTRICT  
 CLAMP DETAILS AND DIMENSIONS**

SCALE: NONE DATE: 2/96  
 APPROVED: 12/07 1/16 10/16  
 PVR DIRECTOR OF ENGINEERING SHEET W3.15

**HARNESS LUG DIMENSIONS**

CARRIER PIPE NOMINAL DIA.	STUD DIA.	A	W	Z	T	H	E	H1	Y	X
4" TO 16"	3/4"	5"	1-1/2"	3-3/4"	3/8"	4-1/8"	3-1/8"	2"	4-1/2"	5"
20"	1"	5-3/4"	1-3/4"	4-7/16"	3/8"	4-1/2"	3-1/4"	2"	5-1/4"	5-11/16"

NOTE: 1. USE TWO HIGH STRENGTH STEEL TIE RODS AT END OF COUPLING.  
 2. TIE ROD HOLE DIAMETER 1/8" LARGER THAN STUD DIAMETER.  
 3. BOTTOM EDGE OF ALL PLATES SHAPED TO FIT O.D. OF PIPE.

**PARKER WATER & SANITATION DISTRICT  
 HARNESS LUG DETAILS**

SCALE: NONE DATE: 2/96  
 APPROVED: 1/16 10/16  
 PVR DIRECTOR OF ENGINEERING SHEET W3.16

**MECHANICAL JOINT RESTRAINT**

NOMINAL PIPE SIZE	NO. OF BOLTS	NO. OF NUTS	K2 INCHES	J INCHES	F INCHES	M INCHES
4"	2	2	11.12	9.5	7.00	0.88
6"	6	4	13.37	11.75	9.15	1.00
10"	8	6	15.62	14.00	11.20	1.00
12"	8	6	17.88	16.25	13.30	1.25
4"	4	2				
6"	6	3	11.12	9.5	7.00	0.88
6"	6	4	13.37	11.75	9.15	1.00
10"	8	6	15.62	14.00	11.20	1.00
12"	8	6	17.88	16.25	13.30	1.25

NOTE: 1. DIMENSIONS FOR 16" AND 20" D.I. PIPE NOT SHOWN.

**PARKER WATER & SANITATION DISTRICT  
 MECHANICAL JOINT RESTRAINT DETAILS**

SCALE: NONE DATE: 2/96  
 APPROVED: 12/00 12/07 1/16 10/16  
 PVR DIRECTOR OF ENGINEERING SHEET W3.17

**11-1/4, 22-1/2 & 90° BENDS**

**DEAD END**

**TEE**

**TYPICAL CROSS SECTION**

MINIMUM BEARING SURFACE AREA (IN SQUARE FEET)

PIPE DIA.	11-1/4"	22-1/2"	90°	TEE OR DEAD END
4"	1.00	1.00	1.00	1.00
6"	1.00	1.00	1.00	1.00
8"	1.00	1.00	1.00	1.00
10"	1.00	1.00	1.00	1.00
12"	1.00	1.00	1.00	1.00
16"	1.00	1.00	1.00	1.00
20"	1.00	1.00	1.00	1.00
24"	1.00	1.00	1.00	1.00

NOTE: 1. ALL VALVES, TEES, BENDS AND PLUGS SHALL BE RESTRAINED AND ANCHORED.  
 2. BEARING SURFACES SHOWN IN CHART ARE MINIMUM.  
 3. BASED ON 150 PSI PIPE PRESSURE PLUS WATER HAMMER = 110 PSI  
 4" 6" AND 8" WATER HAMMER = 120 PSI  
 10" WATER HAMMER = 110 PSI  
 16", 20" AND 24" WATER HAMMER = 70 PSI.  
 4. SOIL BEARING CAPACITY = 3,000 LBS./SQ. FT.

**PARKER WATER & SANITATION DISTRICT  
 CONCRETE KICKBLOCKS BEARING SURFACES AND INSTALLATION**

SCALE: NONE DATE: 2/96  
 APPROVED: 4/01 1/16 10/16  
 PVR DIRECTOR OF ENGINEERING SHEET W3.18

**LENGTH OF TIED PIPE**

PIPE SIZE	4"	6"	8"	10"	12"	16"	20"	24"
VALVE	5/4"	6"	6"	6"	6"	6"	6"	6"
90° BEND	5/4"	6"	6"	6"	6"	6"	6"	6"
45° BEND	5/4"	6"	6"	6"	6"	6"	6"	6"
22-1/2° BEND	5/4"	6"	6"	6"	6"	6"	6"	6"
11-1/4° BEND	5/4"	6"	6"	6"	6"	6"	6"	6"

NOTE: 1. LENGTH OF TIE PIPE MEASURED EACH WAY FROM VALVES AND BENDS.  
 2. CLAMPS AND RODS NOT ALLOWED FOR 24" AND LARGER PIPES.  
 3. A.S. MEANS MILD STEEL.  
 4. MINIMUM 4.5" GROUND COVER REQUIRED.  
 5. BASED ON 150 PSI INTERNAL PRESSURE.  
 6. M.S. MEANS MILD STEEL ROD A.S.T.M. STANDARD DESIGNATION A-36.  
 7. A-193 GRADE B-7.8.  
 8. ON B REVISION HEAVY SERIES.  
 9. SEE THE ROD DETAIL DRAWING, ALSO, THE ROD COUPLING DETAILS, CLAMP DETAILS AND SET CLAMP DETAIL.  
 10. TOGETHER AND IS NOT NECESSARY TO THE LENGTH OF THE RODS.  
 11. STAR BOLTS NOT ALLOWED ON PIPE LARGER THAN 16".  
 12. MINIMUM OF 4 RODS REQUIRED ON 16" PIPE IF STAR BOLTS ARE USED.  
 13. TEES ARE TO BE ROUNDED ON BRANCH ONLY.

**PARKER WATER & SANITATION DISTRICT  
 LENGTH OF TIED PIPE**

SCALE: NONE DATE: 2/96  
 APPROVED: 4/01 1/16 10/16  
 PVR DIRECTOR OF ENGINEERING SHEET W3.11

**TIE ROD DETAIL**

**WASHER DETAIL**

TIE RODS	A	B	C
DIAMETER	3/4"	3/4"	3/4"
LENGTH	1-1/4"	1-1/4"	1-1/4"

WASHERS	D	E	F	G
WIDTH	3"	3"	3"	3"
HOLE DIAMETER	1-1/8"	1-1/8"	1-1/8"	1-1/8"
LENGTH	1-1/2"	1-1/2"	1-1/2"	1-1/2"
THICKNESS	3/8"	3/8"	3/8"	3/8"

NOTE: 1. SEE TIED JOINTS ROD DIMENSIONS SHEET.  
 2. SEE CLAMP DETAILS AND DIMENSIONS SHEET W3.15 FOR PROPER PLACEMENT OF WASHERS.

**PARKER WATER & SANITATION DISTRICT  
 TIE ROD AND WASHER DETAILS**

SCALE: NONE DATE: 2/96  
 APPROVED: 1/16 10/16  
 PVR DIRECTOR OF ENGINEERING SHEET W3.12

**TIE ROD COUPLING DETAIL**

**SECTION "A-A"**

NOTE: BLACK IRON PIPE = SCHEDULE 40.

**PARKER WATER & SANITATION DISTRICT  
 TIE ROD COUPLING**

SCALE: NONE DATE: 2/96  
 APPROVED: 1/16 10/16  
 PVR DIRECTOR OF ENGINEERING SHEET W3.13

**FLANGE LUG DETAIL**

**DIMENSIONS (IN INCHES)**

PIPE DIA.	N	O	P	Q	R	S	U	V	PIPE DIA.
4	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	4
6	2-1/4	2-1/4	2-1/4	2-1/4	2-1/4	2-1/4	2-1/4	2-1/4	6
8	3-1/4	3-1/4	3-1/4	3-1/4	3-1/4	3-1/4	3-1/4	3-1/4	8
10	4-1/4	4-1/4	4-1/4	4-1/4	4-1/4	4-1/4	4-1/4	4-1/4	10
12	5-1/4	5-1/4	5-1/4	5-1/4	5-1/4	5-1/4	5-1/4	5-1/4	12

NOTE: 1. M.S. MEANS MILD STEEL ROD A.S.T.M. STANDARD DESIGNATION A-36. (NUTS SHALL BE A.S.T.M. STANDARD DESIGNATION A-307 GRADE A OR B HEXAGON HEAVY SERIES).  
 2. H.S. MEANS HIGH STRENGTH STEEL ROD A.S.T.M. STANDARD DESIGNATION A-193 GRADE B7. (NUTS SHALL BE A.S.T.M. STANDARD DESIGNATION A-194 GRADE 2H).  
 3. FLANGE LUGS SHALL NOT BE USED ON VALVES.

**PARKER WATER & SANITATION DISTRICT  
 FLANGE LUG DETAIL**

SCALE: NONE DATE: 2/96  
 APPROVED: 1/16 10/16  
 PVR DIRECTOR OF ENGINEERING SHEET W3.14

C:\Users\josh.kimley\Documents\Projects\2020\096502001\DWG\K060001.dwg Job: 10/8/2019, 10:57 AM  
 THE DOCUMENT IS THE PROPERTY OF KIMLEY-HORN AND ASSOCIATES, INC. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFIC PURPOSES FOR WHICH IT WAS PREPARED. NO PART OF THIS DOCUMENT IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF KIMLEY-HORN AND ASSOCIATES, INC.

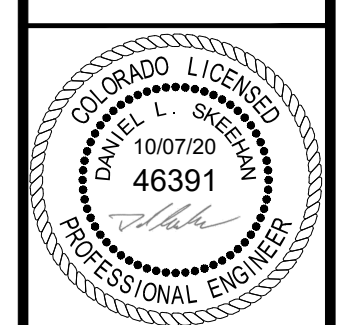
NO.	REVISION	BY	DATE

**Kimley»Horn**

2020 KIMLEY-HORN AND ASSOCIATES, INC.  
 4582 South Ulster Street, Suite 1500  
 Denver, Colorado 80237 (303) 228-2300

DESIGNED BY: DLS  
 DRAWN BY: JRK  
 CHECKED BY: DLS  
 DATE: 10/07/20

PARKER AND PINE FILING 1  
 PARKER, CO  
 CONSTRUCTION DOCUMENTS  
 UTILITY DETAILS

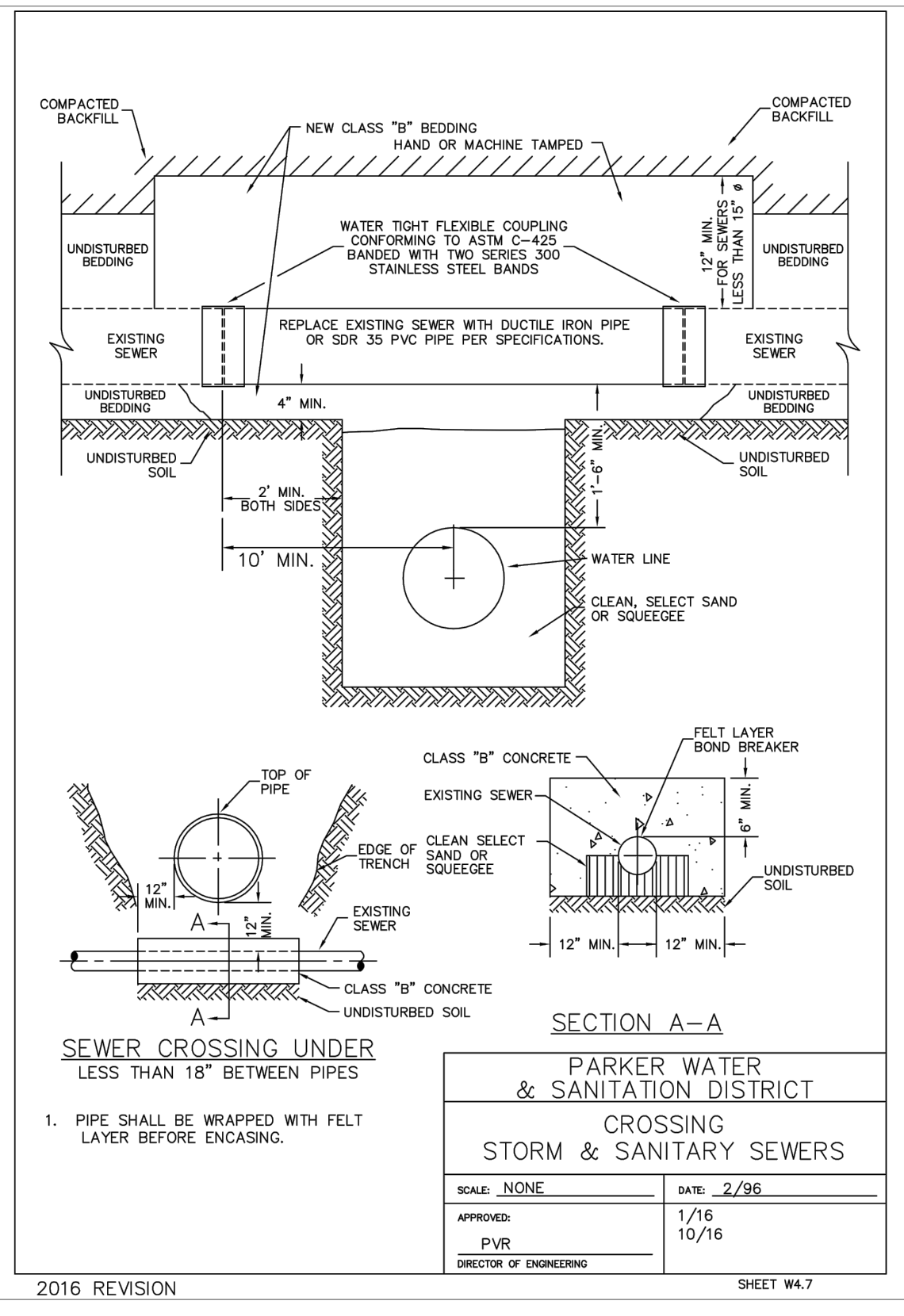
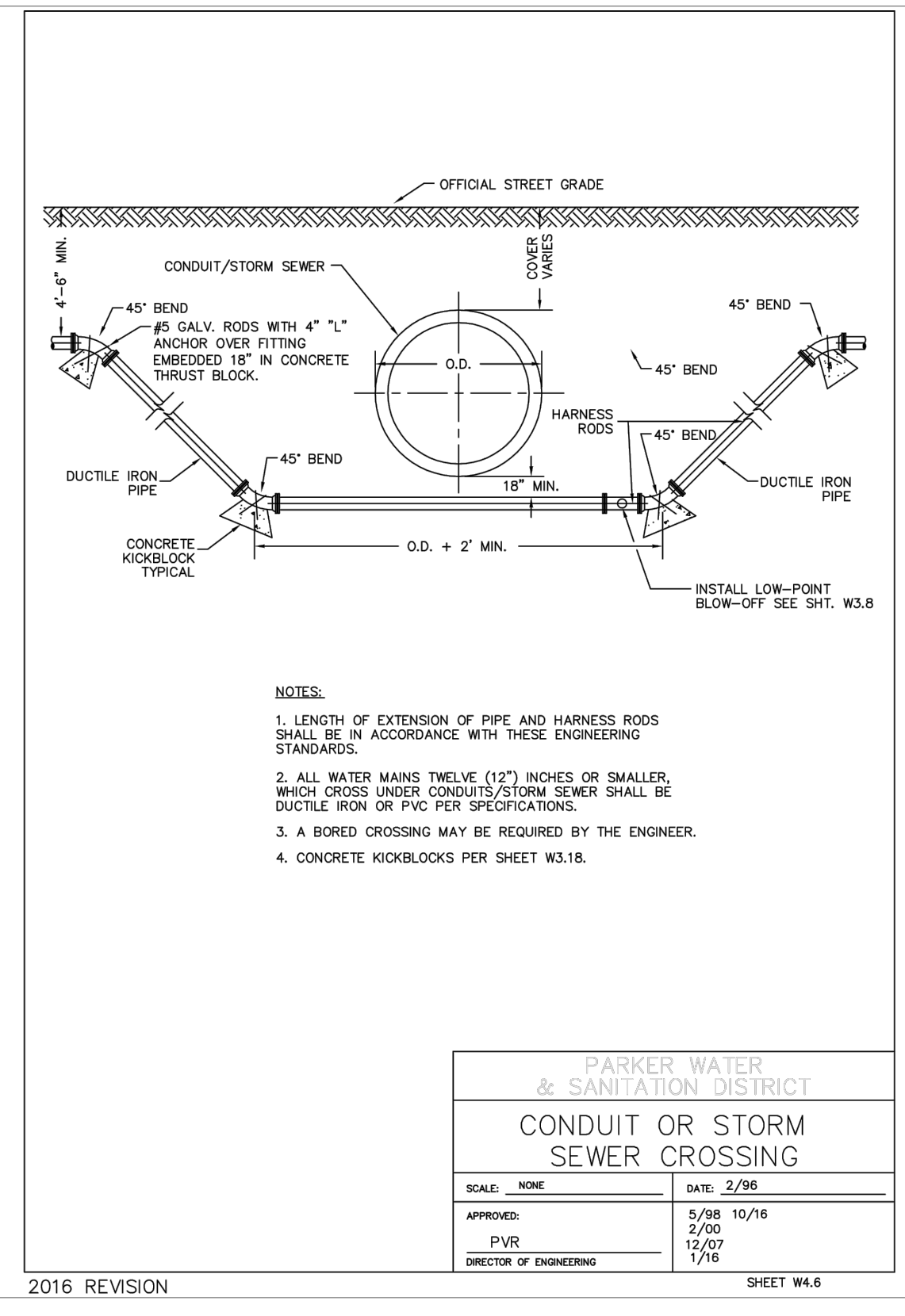
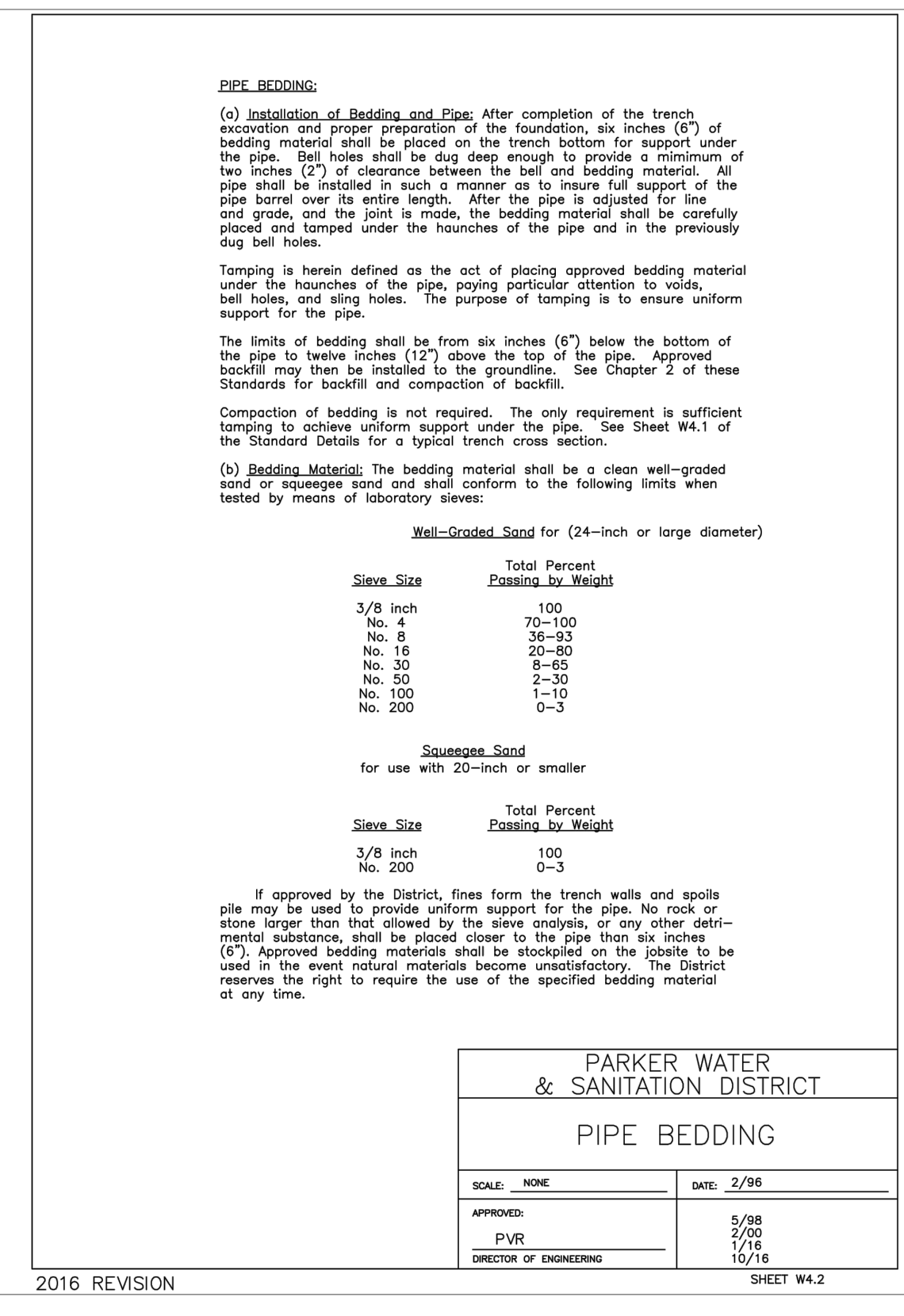
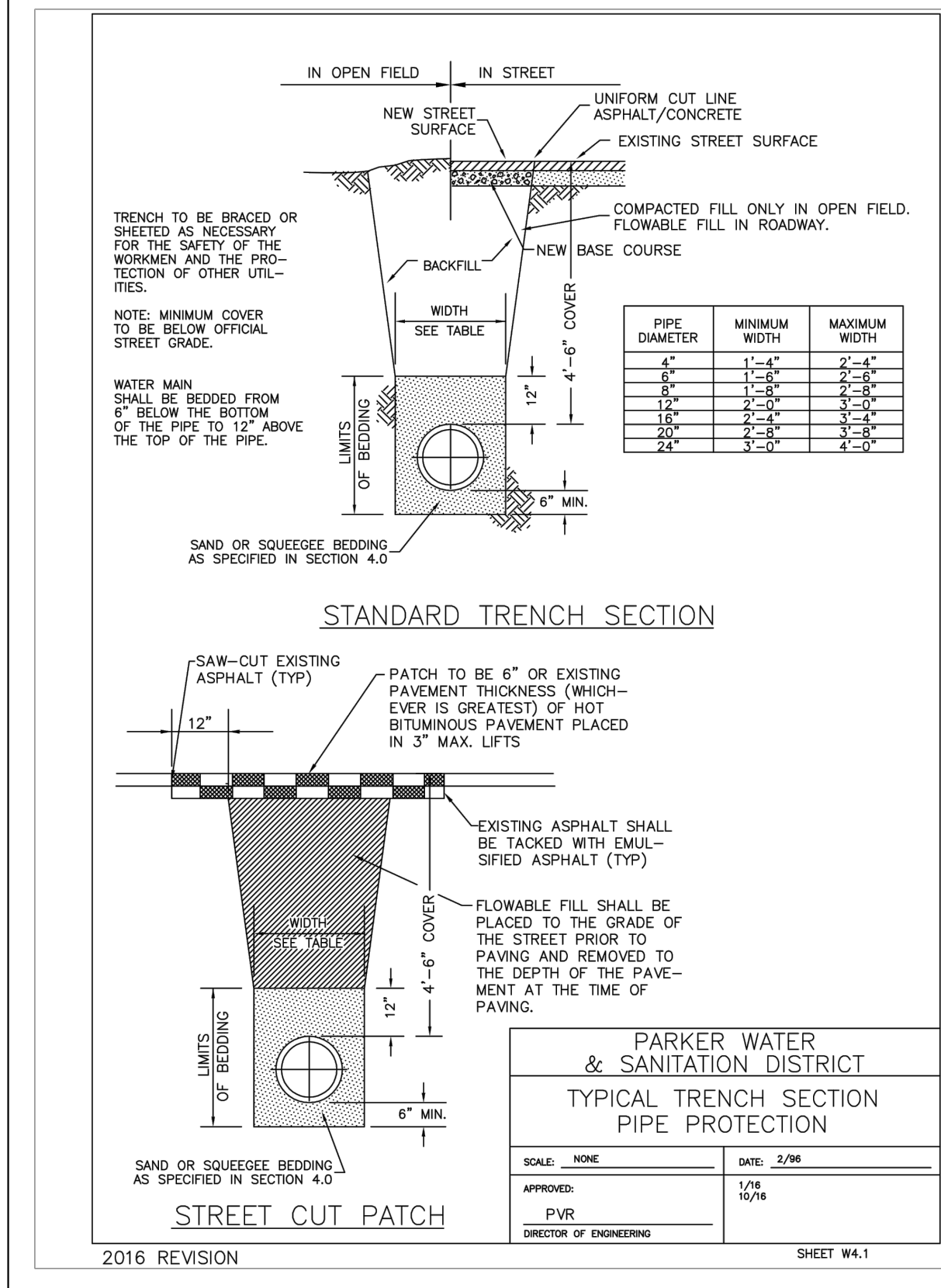
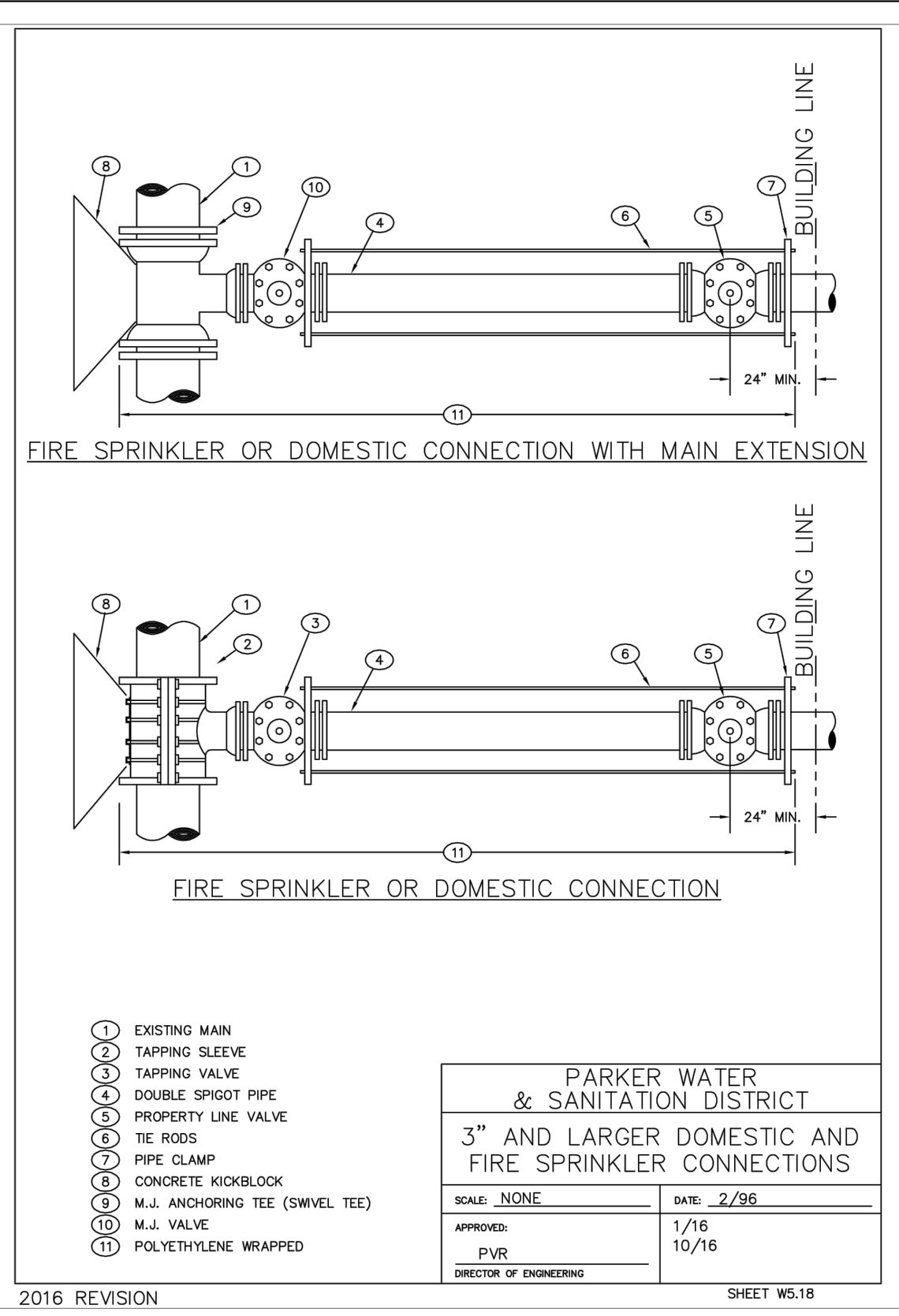
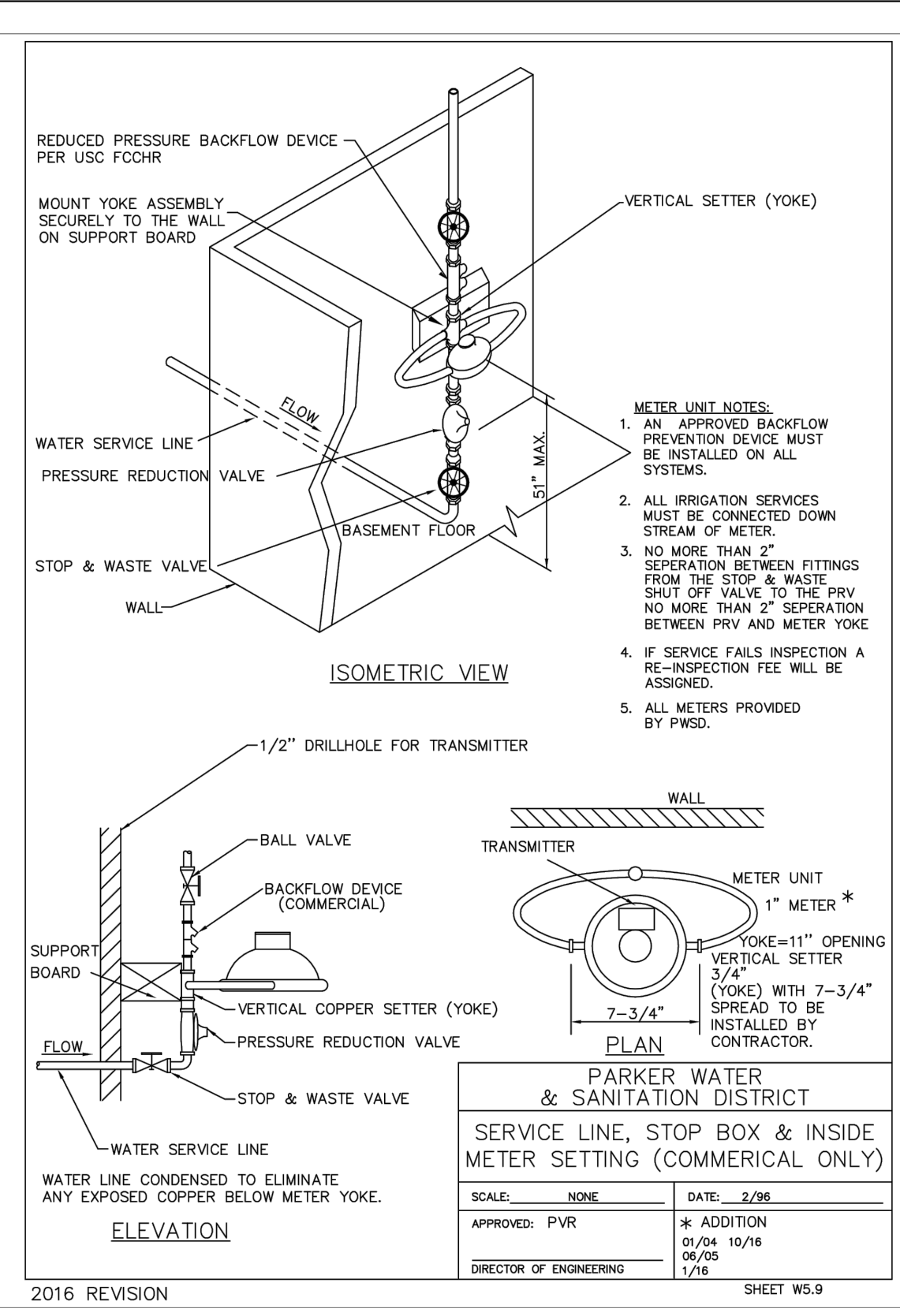
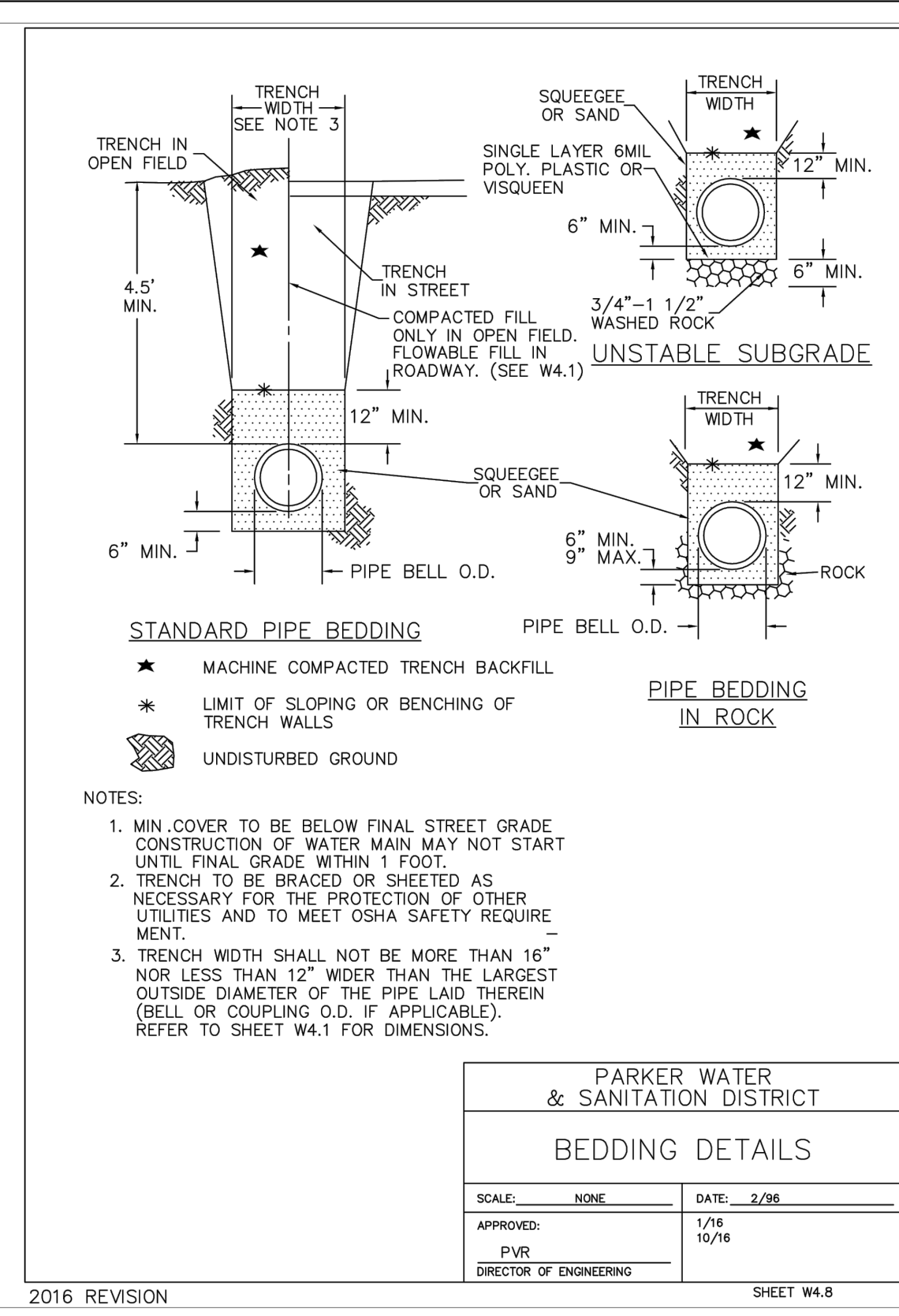
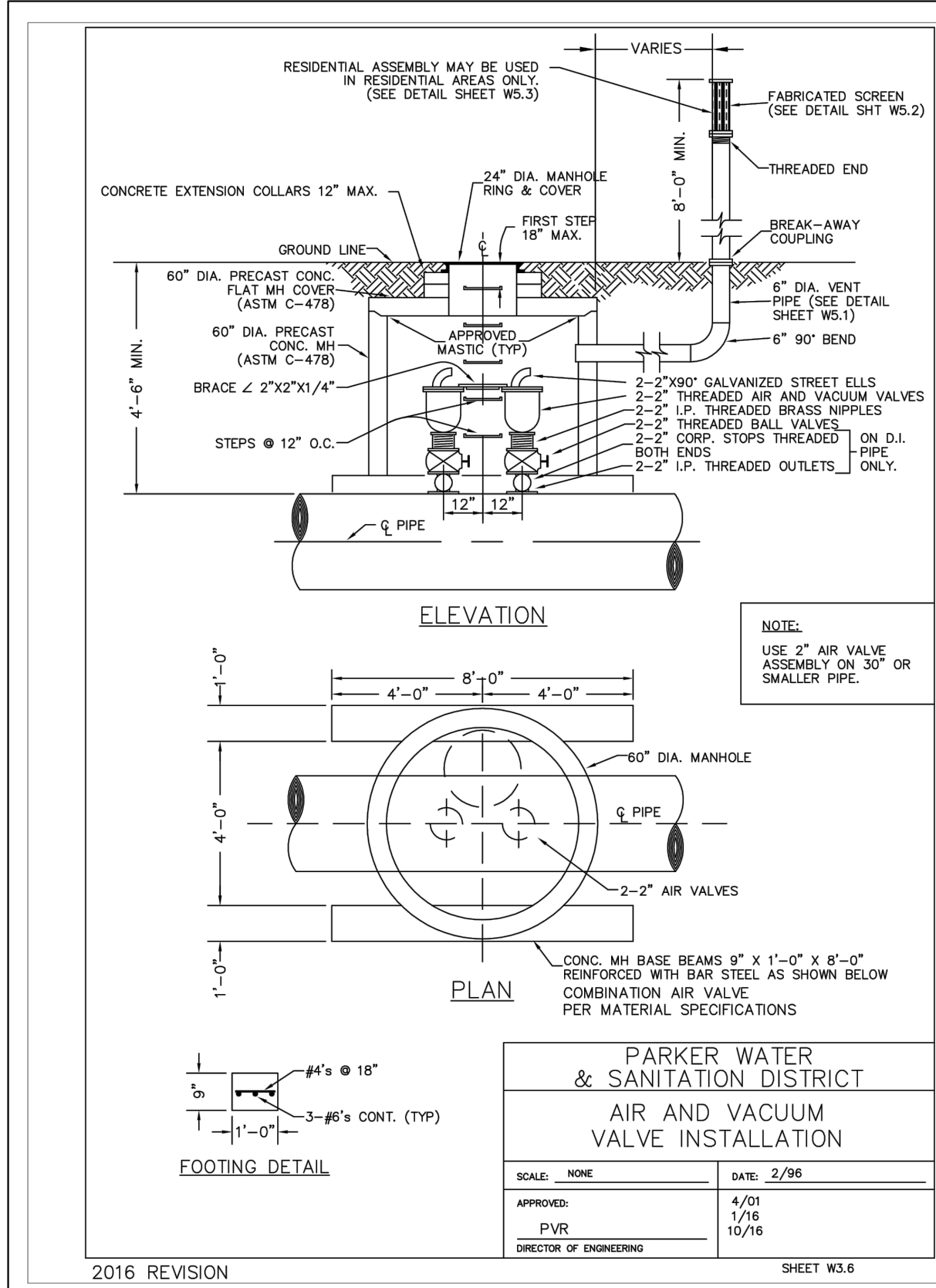


PROJECT NO.  
 096502001

DRAWING NAME  
 096502001UT-DT

C7.12

**APPROVED**  
**Oct 08 2020**  
**PARKER WATER AND**  
**SANITATION DISTRICT**

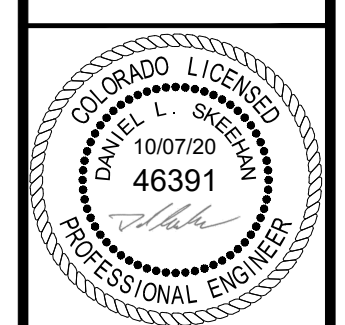


NO.	REVISION	BY	DATE

**Kimley»Horn**  
 2020 KIMLEY-HORN AND ASSOCIATES, INC.  
 4582 South Ulster Street, Suite 1500  
 Denver, Colorado 80237 (303) 228-2300

DESIGNED BY: DLS  
 DRAWN BY: JRK  
 CHECKED BY: DLS  
 DATE: 10/07/20

PARKER AND PINE FILING 1  
 PARKER, CO  
 CONSTRUCTION DOCUMENTS  
 UTILITY DETAILS



PROJECT NO.  
 096502001  
 DRAWING NAME  
 096502001UT-DT  
 C7.13

C:\Users\jank.kimley\Documents\Projects\096502001\096502001UT-DT.dwg    Job# 10/16/2019 10:57 AM  
 This document is the property of Kimley-Horn and Associates, Inc. and is not to be distributed, copied, or reproduced without the written consent of Kimley-Horn and Associates, Inc.